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ABSTRACT

This research used data from the British National Child Development Study to assess the effects of higher education on a number of noneconomic adult outcomes in the United Kingdom, with controls in place to take into account earlier family circumstances and earlier educational attainment. Outcomes were mainly assessed at age 33, and control variables spanned the period from 33 back to birth. The data suggest that graduates are much more likely to attain professional or managerial jobs than nongraduates. Mature graduates and noncompleters (people who entered higher education but did not get a degree) also show an advantage over A-level and below A-level qualifiers. Graduates are relatively protected from unemployment, but this is not the case for noncompleters. Graduates reported more skill improvement over the last 10 years than people with lower qualifications, and graduates are relatively more likely to perceive themselves as in "excellent" physical health. Graduates are less likely to show depression than people with A-level qualifications and somewhat less vulnerable to assault. Graduates report fewer educational problems among their children. They are also more likely to have egalitarian attitudes to gender equality, and are more likely to be nonracist than nongraduates with A-levels. Appendices include frequency distributions and multivariate analysis results. (Contains 1 table, 21 figures, and 24 references.) (SLD)

July 01/46

Report

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The wider benefits of higher education

**Report by the Institute of Education,
University of London, sponsored by the
HEFCE and the Smith Institute**

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**Sustainable
Forests**



**Totally Chlorine
Free**

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Appendices (available with this document on the HEFCE web-site www.hefce.ac.uk)

Appendix 1 *Frequency distributions*

Appendix 2 *Multivariate analysis results*



Acknowledgements

The idea for this research came from the Smith Institute, who, in conjunction with the Higher Education Funding Council for England (HEFCE), sponsored it. The findings were reported at a seminar held at 11 Downing Street as part of a series on the theme of "Equality" organised by the Smith Institute. Two other papers commissioned by the HEFCE supplied background information for the seminar: *Economic Benefits of Higher Education* by Gareth Williams of the Post-16 Education Group, Institute of Education, and *Graduate Employment: a review of issues* by John Brennan, Centre for Higher Education Research and Information, the Open University. The results reported here are more comprehensive than those presented at the seminar and contain some new analysis. We wish to acknowledge the assistance of Sofia Despotidou and Gina Clements, who helped make the data-processing and typing less onerous.

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Summary

The research used data from the National Child Development Study (NCDS) to assess the effects of higher education on a number of non-economic adult outcomes, with controls in place to take into account earlier family circumstances and earlier educational attainment. Outcomes were mainly assessed at age 33. Control variables spanned the period from 33 back to birth.

Employment

- Graduates are much more likely to attain professional or managerial jobs than non-graduates. Mature graduates and non-completers (that is, people who entered higher education, but did not gain a degree) also show an advantage over A-level and below A-level qualifiers.
- Graduates are relatively protected from unemployment. However, this is less the case for mature graduates and is not the case for non-completers.

Skills improvement

- Graduates of both sexes reported more skill improvement over the past ten years than people with lower qualifications. The effects were particularly marked for mature graduates in verbal, computing and caring skills.

Health and vulnerability

- Graduates are relatively more likely to perceive themselves as in 'excellent' physical health. This is also the case, but less strongly so, for mature graduates. A younger cohort (born in 1970) also showed a strong gradient in self-assessed health by qualifications.
- Graduates are less likely to show depression than people with below A-level qualifications. Their risk of depression is similar to A-level qualifiers, when family origin and ability are considered as control variables. Non-completers are more likely to show depression than A-level qualifiers.
- Graduate men are somewhat less likely to be victims of accidents or assaults than non-graduates, while graduate women are at a lower risk of assault from their partners in dissolving relationships.

Parenting

- Graduate parents report fewer educational problems among their children. These children have more books on average than the children of non-graduate parents.

Civic engagement

- There is little difference by qualification in frequency of voting, although mature graduates have higher rates of voting.
- Graduates are relatively more likely to be members of, and actively involved in, community and voluntary associations, particularly mature male graduates. Non-completers are more likely to be involved than A-level or below A-level respondents.

Attitudes

- Graduates are more likely to have egalitarian attitudes to gender equality, and more likely to be anti-racist than non-graduates with A-levels. Women graduates and mature graduates are most likely to have egalitarian attitudes, even when controlling for type of employment.
- Graduates have more faith in the political process than non-graduates including those with A-levels. This is most marked for mature graduates.

The research provides convincing evidence of the benefits of higher education; however, more analysis is needed to estimate more precisely the extent and the form of the contribution, over other kinds of experience, that higher education makes.

1. Introduction

Research across many countries has consistently shown a return to earnings from higher education, with the benefit greater for women than for men (Apslund and Pereira, 1999). The research ranges from cross-country comparisons of earning differentials across different groups defined by qualification level, to self-reports by graduates of the value of their higher education experience to the work they do. Particularly convincing evidence of the earnings benefit in Britain comes from the work of Richard Blundell and colleagues at the Institute for Fiscal Studies (Blundell et al, 1997). Using the National Child Development Study (NCDS) dataset they demonstrated that, taking account of a wide range of family background and early educational performance indicators, the return to earnings of gaining a degree was sustained. Compared to A-levels, the proportional increase in earnings from gaining a degree held at 12% for men and at 34% for women – with a larger reduction for men than for women when the background factors were taken into account (9% reduction, men and 5% reduction, women). This points both to an increased benefit from higher education for women and an equalising effect in the sense that family background and other factors have substantially less effect on the return to earnings for women than they do for men.

Return to earnings can be described as a "private" benefit to individuals. Evidence on the wider range of benefits claimed for higher education is more limited. These include the economic benefits gained from enhanced productivity at the company level through the presence of graduates, and benefits to the health of the macro-economy more generally (Brennan, 1999). Research demonstrating the *social benefits* is even more rare, i.e. benefits to do with the social functioning of individuals and society as a whole. Benefits such as increased social cohesion may be seen as a worthwhile in themselves or in terms of their (indirect) effect on the macro-economy, by for example reducing the costs of the social security and criminal justice systems. Williams (2000) reports five kinds of higher education benefits identified by economists.

1. *Monetary benefits to individual graduates.*
2. *Higher productivity of graduates.*
3. *External economic benefits: i.e. higher productivity in the economy as a whole.*
4. *Direct immediate or subsequent consumption benefits for students and graduates; higher education has been likened both to an immediate consumer good and to a durable consumer good.*
5. *External non-monetary benefits: i.e. social and cultural and similar benefits to the community as a whole from the presence of graduates.*

Building on the work of the Institute of Fiscal Studies on the earnings return to higher education, the research reported here uses the same longitudinal dataset, the NCDS, to examine a selection of benefits mainly in the fifth category – the social benefits. We address the question:

Does higher education, over and above A-levels, increase the likelihood of social benefits to those who receive it, taking account of earlier circumstances and attainment?

We examine benefits in relation to employment, skills improvement, health and vulnerability, parenting, civic engagement and attitudes.

Explanation of higher education effects

Two broad approaches have been put forward to account for economic and labour market benefits of higher education. These theories can be applied analogously to non-economic personal benefits. The first approach emphasises the cognitive competencies conferred by higher education, while the second emphasises the position of relative social and labour market advantage associated with higher education credentials. Although these dimensions are analytically separate, they are not always separated in practice (see Stacey and Behrman, 1997 for a review).

Cognitive competence: Thurow (1962) has argued that higher education does not necessarily increase the productivity of graduates, but rather serves as a screening mechanism. The higher

productivity of graduates is really attributable to their greater ability. Similarly, the greater knowledge of health issues shown by graduates, and their greater compliance with health advice (Hammond, 2000), may simply reflect greater native ability to acquire information rather than higher education experience. It is important therefore to control for cognitive ability when assessing the effects of higher education on non-economic benefits.

Labour market advantage: This concept may affect the assessment of benefits of HE from two perspectives – the characteristics of graduates before entering higher education, and their relative occupational advantage on completion. The first of these perspectives is most important for the analyses reported here. There is a body of evidence to show that children from middle-class origins are more likely than children from less advantaged origins but with equal measured ability to graduate (see e.g. Halsey et al, 1980; Egerton, 1997; Bynner, Joshi and Tsatsas, 2000). Class origins are also known to affect non-economic outcomes such as health in later life (Davey-Smith et al, 1991; Whitehead and Dahlgren, 1992). Therefore it is important not to attribute to higher education, any health or other effects which are attributable to, for instance, better foetal and childhood nutrition. Additionally, class origins continue to affect occupational attainment and earnings, even among graduates, with graduates from working class origins holding the less remunerative and less prestigious jobs (Bennett et al, 1992; Heath et al, 1993). It is important therefore to control for family background characteristics in assessing the benefits of higher education. From the occupational attainment perspective, graduates generally earn more and have superior working conditions compared with less qualified people, and this again may have non-economic benefits. Essentially this is an indirect effect of higher education. More extended models than those reported here are needed to analyse the labour market routes through which higher education might affect non-economic outcomes. The models presented here are preliminary and point to further work that could usefully be done.

The analyses reported here give a descriptive estimate of the relationship of higher education to a range of non-economic benefits, with and without controlling for family origins and childhood cognitive skill tests. For some analyses, estimates are also controlled for the effects of occupational experience. Some comparisons are made with the 1970 Birth Cohort Study

(BCS70) sample in 1996 (at age 26). A representative sub-sample of the NCDS sample, surveyed in 1995 (aged 37), was used for the parenting analyses.

2. Method

Data

Data are drawn from the National Child Development Study, a panel study of all the children born in the first week of March, 1958 (n = approximately 17,000). Five follow-up surveys have been carried out, when the children were aged seven, eleven, sixteen, twenty-three and thirty-three (Ferri, 1993). A further follow-up, using a 10% sample (n = 1,714) was carried out in 1995, in which the assessment of basic skills was the main feature (Bynner and Parsons, 1997). Complete data for use in this analysis were available for 1,568 respondents. Data from all five panels are used, giving contemporaneous information on family circumstances during childhood and adolescence, and information on early adult circumstances and achievements. Additional data from the 1995 10% sample is used for the parenting analyses. Some comparisons are made with the 1970 Birth Cohort Study, using data from primarily the age 10 (1980) and age 26 (1996) sweeps (Bynner and Steedman, 1995).

Analysis strategy

The analyses focus on a number of 'outcome' variables for which data had been collected in NCDS or BCS70 (see Table 2a). These were: respondent's own class (based on occupation) at the time of interview, whether they were unemployed or in employment, skills improvement over the previous ten years, physical and mental well-being and accidents and assaults, voting, membership and participation in community and voluntary organisations, attitudes to gender equality, anti-racism and political cynicism. Logistic regression analysis was used to examine the relationships between higher education experience and all of these variables (apart from the attitude variables, where multiple regression was used – see below).

In the logistic regression results reported here, a binary *outcome variable* is used, e.g. membership vs non-membership of a voluntary organization. The method estimates the relative odds of being a member of a voluntary organization, as opposed to not being a member of one, the 'odds ratio', given a particular level of education. This odds ratio is compared with the odds ratio for qualifications below GCSE A-level or equivalent (the higher education entrance requirement), which is set to 1. Thus an odds ratio greater than 1 for graduates signifies a *positive* relationship between getting a degree and membership of a voluntary organisation, and an odds ratio below 1 signifies a *negative* relationship.

As will be seen later, a graduate woman is about four times as likely to be a member of a voluntary organization as a woman with below GCSE A-level, and about twice as likely as a woman with A-level qualifications. As noted earlier, it is important to control for characteristics of graduates, which may also be associated with these 'social' benefits. The estimates were therefore controlled for family background characteristics that are known to affect educational and occupational attainment, viz father's occupation, mother's education, parental interest in respondent's education, over-crowding, childhood poverty as indicated by receipt of free school meals. The respondent's ability as indicated by tests of cognitive skills at age 11 was also used as a control variable. These controls reduce the odds of graduate women's membership of voluntary organisations by about half when compared to women with A-level or below A-level qualifications.

Additional controls included the duration of periods of unemployment, full-time housework and occupational group in the analyses of skill development. Public sector employment was used as an additional control variable in the analyses of civic engagement and attitudes. Partner's education, age of oldest child and number of siblings were used as additional control variables in the parenting analyses (Table 2b gives details of the variables).

Multiple regression was employed in the analysis of the attitude outcome variables, which were treated as continuous, i.e. having multiple values as opposed to the two values of the binary variables considered previously. The attitude measures were aggregate scores obtained by summing across sets of opinions items, scored 1 to 5 on a scale of agreement-disagreement, and

taking the mean score for each respondent. In the analysis, the regression coefficients for the education levels variable show the proportional increase or decrease in the attitude score that accompanies movement from one educational level to another, with and without controls.

Except when otherwise stated, results cited as statistically significant meet the .05 criterion, that is to say the probability of the result arising by chance is less than one in twenty ($P < .05$).

The results of both types of analysis are represented in the report by graphs demonstrating the higher education gradient for a given outcome under various conditions. Additional information is available in the appendices on the HEFCE web-site, under 'Publications'. Appendix 1 gives the frequency distributions for men and women for all the variables involved in the analysis. Appendix 2 gives the full sets of odds ratios and regression coefficients estimates on which the graphs are based, together with their statistical significance. From these latter tables we can thus observe the relationships not only of higher education to the outcomes, but to all the other 'control' variables as well.

Variables

Education

Detailed qualification data are collected in NCDS. The highest qualification attained at age 33 (NCDS) or age 26 (BCS70) was collapsed into four basic categories: all *qualifications below A-level GCSE (or equivalent)* and none; *A-level (and equivalent)*; *sub-degree* (e.g. NVQ Level 4); and *degree and higher* (see Table 1a). In NCDS it was also possible to identify respondents who had enrolled on higher education courses but had not completed them, *non-completers*. It was also possible to identify *mature graduates* (i.e. students who had entered higher education aged 21 or over); these two categories were added to the classification of educational levels. However, for the analysis of the 1995 sub-sample of NCDS all the categories were merged into broader categories because of low frequencies. Mature graduates were categorised with early graduate, and non-completers were categorised in terms of their actual educational level (Table 1b). In practice, about a third of 1991 non-completers had obtained a degree by 1995. For analyses of the

BCS70 sample the simpler coding was also used. At age 26, there were few mature graduates in the sample, and non-completing higher education students could not be identified with sufficient confidence (Table 1c).

Table 1a: NCDS Condensed highest qualification - 1991

	Frequency	%
Below A-level	6,572	59
A-level & equivalent	1,483	13
Non-completers	153	1
Sub-degree	1,523	14
Mature degree	131	1
Degree & higher	1,283	12
Total	11,145	100.0

Missing values 262

Table 1b: NCDS Condensed highest qualification - 1995

	Frequency	%
Below A-level	841	54
A-level & equivalent	240	15
Sub-degree	266	17
Degree & higher	221	14
Total	1,568	100.0

Missing values 141

Table 1c: BCS70 Condensed highest qualification - 1996

	Frequency	%
Below A-level	5,382	64
A-level & equivalent	892	11
Sub-degree	373	5
Degree and higher	1,727	21
Total	8,374	100.0

Missing values 629

It should be noted that the relatively small numbers in the non-completers category and in the mature graduates category means that the results need to be treated cautiously. We need relatively much larger estimates of differences between these categories and others to achieve statistical significance, than for the other comparisons. That is to say when a number of other variables are controlled, the estimates might vary considerably within wide confidence intervals, i.e. they might not differ significantly from each other or from zero.

Employment

Note Frequencies of the categories for each variable are given in Appendix 1.

Respondent's class. This variable was pre-coded into socio-economic groups (SEGs). SEGs 1, 2.2 to 5, and SEG 13 were coded as "service" class (professionals, lower professionals, managers and supervisors). SEGs 2.1, 6, 7, 12 and 14 and SEGs 8 to 11 plus SEG 15 were coded into a comparison category comprising intermediate and manual occupations. Only those currently employed were included in the analysis.

Unemployment The economic activity variable was coded to two categories: "employed" and "unemployed or economically inactive".

Skills improvement:

Writing, computing (solving problems using a computer), maths (solving mathematical problems), organising, instructing, advising and counselling/caring. These variables were coded as "improved" (in last ten years) vs "no change", "got worse" and "don't have skill".

Health and vulnerability:

General health was coded to two categories "excellent" vs "other", which included good, fair and poor. The same variable was available on BCS70 and NCDS Sweep 4 (1981).

Psychological state (depression). This was based on a continuous scale comprising 24 items (the "Malaise" inventory). The cut-point was 7, with those scoring 8 or more categorised as "depressed".

Accidents was coded to two categories, "had suffered at least one accident or assault in the previous ten years", vs "had not".

Marital violence was based on a question asked to separated or divorced respondents on whether or not they had suffered a physical assault from their partner.

Parenting:

Two variables were used: 1) whether or not parents reported their children as having basic skill problems, such as writing or reading, and 2) the number of books owned by their children, coded into two categories – over and under 50 books.

Civic participation

Voting: Respondents who reported having voted less than four times in local or general elections at age 33 were categorised as "low" voters, while those reporting having voted four or more times were categorised as "high".

Voluntary organisation membership: Those people who reported past or current membership of any community, voluntary or charitable organisation were categorised as involved in two separate variables reflecting past membership and current membership.

Attitudes

Support for gender and race equality, political cynicism

These variables were continuous scales obtained by aggregating the scores across sets of opinion items to each of which the response categories were "strongly agree" (1), "agree" (2), "can't decide" (3), "disagree" (4), "strongly disagree" (5), adjusting the direction of scoring as appropriate. They were derived by the NCDS team using factor analysis, and were constructed so that values fall between 1 and 5.

Items

Note: Percents in brackets are the percentages of all NCDS respondents at age 33, who expressed the opinion in the direction of the attitude; e.g. 69% agreed that "men and women should do the same jobs around the house" – i.e. supported *gender equality*.

Support for gender equality

- "There should be more women bosses in important jobs in business and industry" (64% agree);
- "If a child is ill and both parents are working it should usually be the mother who takes time off to look after the child" (48% disagree);
- "Women should have the same chance as men to get some training or have a career" (97% agree);
- "Men and women should do the same jobs around the house" (69% agree);
- "When both partners work full-time, the man should take an equal share of the domestic chores" (93% agree);
- "I would not want a woman to be my boss" (78% disagree);
- "It is less important for a woman to go out to work than it is for a man" (64% disagree).

Support for race equality

- "It is alright for people from different races to get married" (80% agree);
- "I would not mind if my child went to a school where half of the children were of another race" (52% agree);
- "I would not mind working with people from other races" (90% agree);
- "I would not want a person from another race to be my boss" (79% disagree);
- "I would not mind if a family from another race moved in next door with me" (67% agree).

Political cynicism

- "Politicians are mainly in politics for their own benefit and not for the benefit of the community" (39% agree);
- "It does not really make much difference which political party is in power in Britain" (29% agree)
- "None of the political parties would do anything to benefit me" (20% agree)

Childhood characteristics

Father's occupation at age 16: This variable was pre-coded into socio-economic groups. SEGs 1 to 5, and SEG 13 were coded as "service" class (professionals, lower professionals, managers and supervisors). SEGs 6, 7, 12 and 14 were coded as "intermediate" and SEGs 8 to 11 and SEG 15 were coded as "manual".

Mother's education: This was coded as completing by age 15 vs completing aged 15 plus.

Parental interest in child's education: This was coded as "very interested", if either parent was judged as "very interested" as against "not interested". In practice the variable was corrupted and is a very weak indicator of parental interest.

Free school meals: This was coded according to whether or not the child received free school meals at age 11.

Over-crowding: Households with more than 1.5 people per room were coded as "over-crowded" (at age 11).

Cognitive skill: Tests of cognitive skills at age 11 (verbal and non-verbal ability) were coded into three categories; "low", "mid-range" and "high".

Ethnicity

Dummy variables were constructed identifying "White", "Afro-Caribbean", "Asian" and "Other" ethnicity.

Employment characteristics

Not working: Periods of unemployment were coded as "none", "up to one year", "one to three years" and "three or more years". Full-time housework was coded as "none", "up to three years", "four to six years" and "seven or more".

Occupation: This is based on Standard Occupational Classification in a manner analogous to that used by Robinson and Manacorda (1997). However, the categorisation is more finely detailed for graduate occupations (see Appendix 2).

NCDS 1995

Partner's education was based on the age of completing full-time education and was coded as "up to 16", "17-19" and "20+".

Number of children: because of low frequencies, numbers of children above three were coded with "three children" into a "three or more" category.

Age of the oldest child was fitted as a continuous variable.

BCS70

Father's occupation at age 16: This variable was pre-coded into Registrar-General's social class. Classes I and II were coded as "service" class (professionals, lower professionals, managers, and supervisors and technicians). Class IIINM was coded as "clerical" and Classes IIIM, IV and V were coded as "manual".

Mother's education: This was coded as completing by age 15 vs completing aged 15-plus.

Free school meals: This was coded according to whether or not the child received free school meals at age 10.

Over-crowding: Households with more than 1.5 people per room were coded as "over-crowded" (at age 10).

Cognitive skill: Standardised scores on tests of reading and maths at age 10 were added together and the summed score was coded into three percentiles, "low" "mid-range" and "high".

3. Results

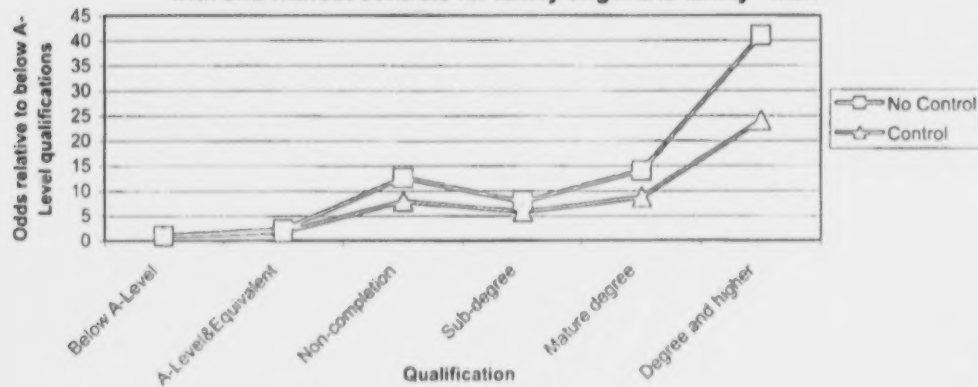
We start with the outcomes that are most obviously related to higher education, i.e. those concerned with employment, and then move on to the wider range of social benefits.

3.1 Labour market outcomes

3.1.1 Social class and occupation

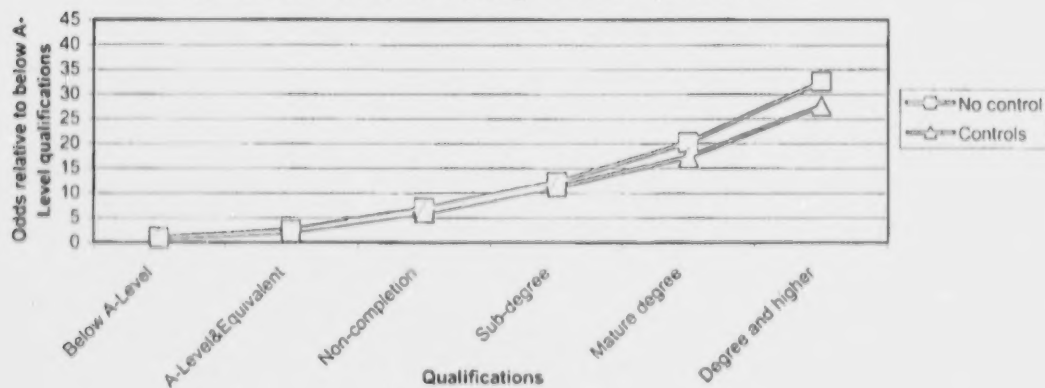
Professional and managerial occupations accounted for 38% of male employment in the NCDS sample (present or last job) and 33% of women's. As we might expect graduates were more likely to enter such jobs than people with lower qualifications. Figures 3.1.1a and 3.1.1b show that graduates who had obtained their degrees through the conventional route had the highest odds ratios (Appendix 2 tables 3.1.1a and 3.1.1b).

Figure 3.1.1a: Chances of having a professional or managerial job, with and without controls for family origin and ability - Men



A steep gradient is seen between those with below A-level qualifications moving up by qualification level to degree level. Men graduates were about forty times more likely to attain this status than those with below A-level qualifications, and about twenty times more likely to obtain professional/managerial jobs as those with A-level or equivalent ("matriculates"). Mature men graduates were about one-third as likely to attain professional/managerial jobs as other male graduates, an effect which may be partly attributable to shorter work experience as graduates, and partly attributable to age discrimination (Purcell and Hogarth, 1999; Egerton, 2000). The addition of controls for family characteristics and ability reduced the odds ratios considerably, nearly halving them for ordinary graduates. Nonetheless, both ordinary and mature male graduates still had much increased chances of reaching professional/managerial jobs compared to people with lower qualifications.

Figure 3.1.1b: Chances of having a professional or managerial job, with and without controls for family origin and ability - Women



A similar gradient by qualifications is observed for women. Typical women graduates were about thirty times more likely to attain professional/managerial jobs than those with below A-level qualifications, and about fifteen times more likely to obtain them than those with A-level or equivalent matriculation. Women with sub-degree qualifications were relatively more successful than men with these qualifications, as were women mature graduates. This may be partly attributable to the 'white-collar' nature of sub-degree qualifications for women; while for men, this category includes technician jobs. It is also likely to reflect the very poor opportunities open to less qualified women (the comparison category) with disrupted work histories, usually due to child-bearing (Dex, 1987; Dale and Egerton, 1997).

Generally, the gradient for qualifications for women is smoother than for men. It is also noticeable that the controls for family characteristics made much less difference to the achievements of women than of men, suggesting that higher education has a socially equalising effect, among women. The experience of higher education, despite non-completion, seems to be beneficial to both men and women, but more markedly so for women.

3.1.2 Unemployment and economic inactivity

At the time of the interview, 10% of men and 32 % of women were not in employment.

The odds ratios for unemployment/inactivity show that graduate men were less likely to be unemployed than non-graduates. In this case the likelihood for unemployment for male (ordinary) graduates was about one-third of that for those with below A-level qualifications, and about three-quarters of those with A-level or equivalent qualifications (although the latter difference is not statistically significant). The gradient becomes less steep for men when controls for family origin and ability are added. Figures 3.1.2a and 3.1.2b show, however, that male and female non-completers ran a higher risk of unemployment than matriculates.

Figure 3.1.2a: Likelihood of not working by qualification, with and without controls for family origin and ability - Men

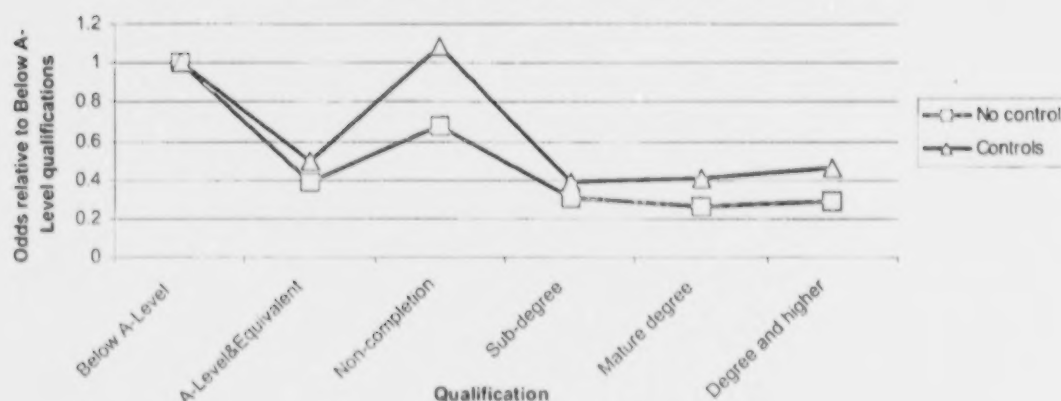
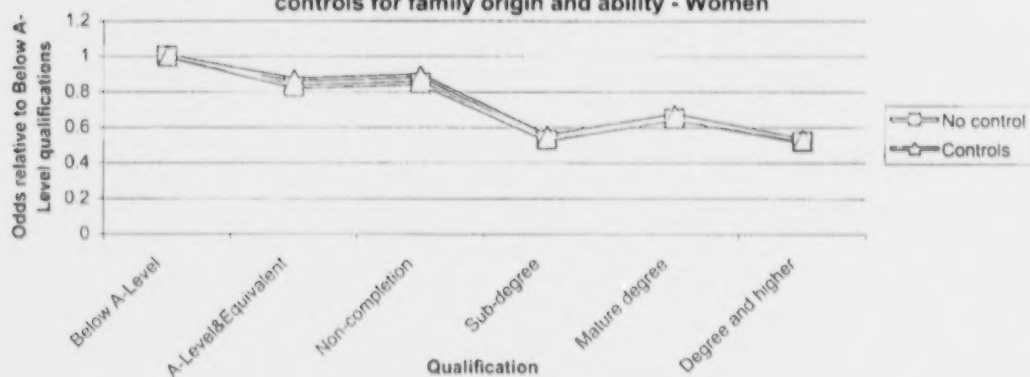
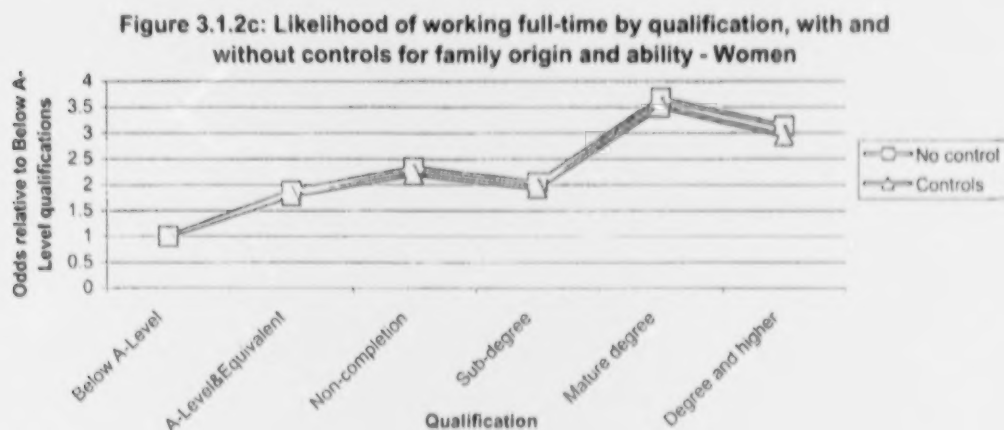


Figure 3.1.2b: Likelihood of not working by qualification, with and without controls for family origin and ability - Women



For women there seems to be little difference in unemployment/inactivity between various levels of tertiary education, *with or without controls* for family origins and ability. But this may be because many women in this age group who are not in full-time employment, are out of the labour market temporarily looking after children or combining part-time work with childcare (Bynner, Morphy and Parsons, 1997). The categorisation used also masks a difference between graduate and sub-degree women in the likelihood of working full-time. Vocational qualifications, particularly for public sector jobs, provide ports of entry to the labour market after family formation, and this is often through part-time work (Dex, 1987; Dale and Egerton, 1997).

A further analysis (Figure 3.1.2c) showed that graduate women were somewhat more likely to hold full-time jobs than sub-degree women, who, vice-versa, were more likely to hold part-time jobs.



3.1.3 Conclusions

Generally, these results, which control for family origin characteristics and for measured ability, show that higher education qualifications are important to employability; in particular they have a relatively equalising effect (in relation to social origins) for women. This may reflect the higher likelihood of employment in the public sector for graduate women (Dale and Egerton, 1997), with this sector being perceived as more meritocratic and credentialist in its recruitment procedures.

3.2 Skills improvement

Earlier research has shown that self-reported skill levels correlate highly with education, occupational success and lower depression scores (Bynner, 1994). Since it is known that highly educated adults receive more education and training after graduation than less educated people (Sargent, 1997), a ten-year period for possible improvement is needed to assess the extent to which the experience of higher education retains an identifiable effect over and above the effects of subsequent occupational experience.

Two types of analysis were carried out: first, the same types of analysis as those reported previously (with and without controls for family origins and ability), and secondly, an analysis that also controlled for specific occupations and experiences of unemployment or full-time family care. The occupations were ordered roughly in terms of social class, but specific types of managerial and professional work were identified (corporate managers as opposed to consumption services managers, e.g. restaurant managers and owners), and science professionals as opposed to finance or to health and education professionals.

3.2.1 Improvements in writing, computing and mathematics

Men

Writing, mathematics and computing come under the heading of what are currently described as generic *key skills*, i.e. those generic, as opposed to specifically vocational, skills deemed central to employability in the modern labour market. To what extent was higher education contributing directly to the transmission of these skills to graduates?

A minority of men claimed to have improved their writing, computing and maths skills in the last ten years: 39%, writing, 43%, computing and 35%, maths. Figure 3.2.1a shows the odds ratios for improvements in writing, computing and numeracy skills over the past ten years at different qualification levels for men. These odds ratios were controlled for ability and family origins. There is a clear and steep gradient in the odds ratios for writing and computing, but not for maths. Differences between graduates and those with A-levels were statistically significant for computing and writing.

Improvements were most marked for mature graduates, many of whom would recently have undergone sustained training in these skills during their degree courses. For maths, only men with sub-degree qualifications appeared to have improved. It is likely that this reflects the technical nature of the jobs men with these qualifications enter, plus the qualification route which may involve evening study or day release, over a longish period of time.

Figure 3. 2.1a: Men - Improvements in writing, computing and maths skills in the past ten years, controlling for family origin and ability

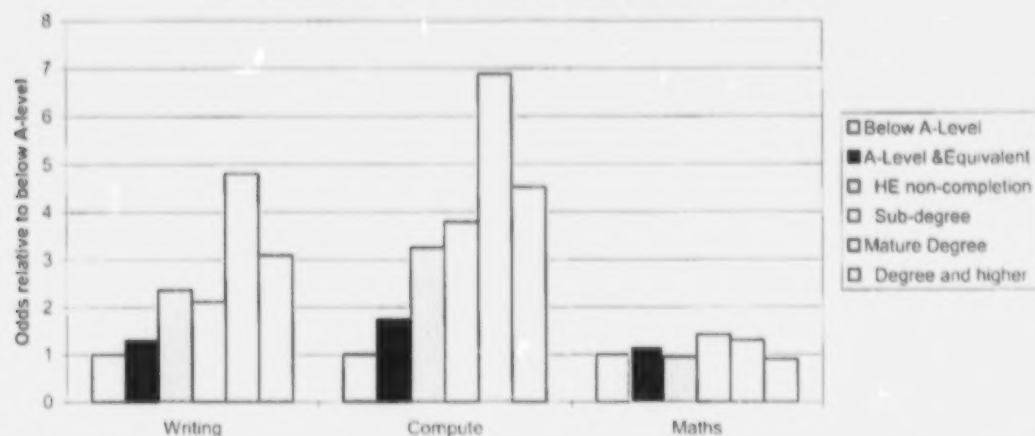
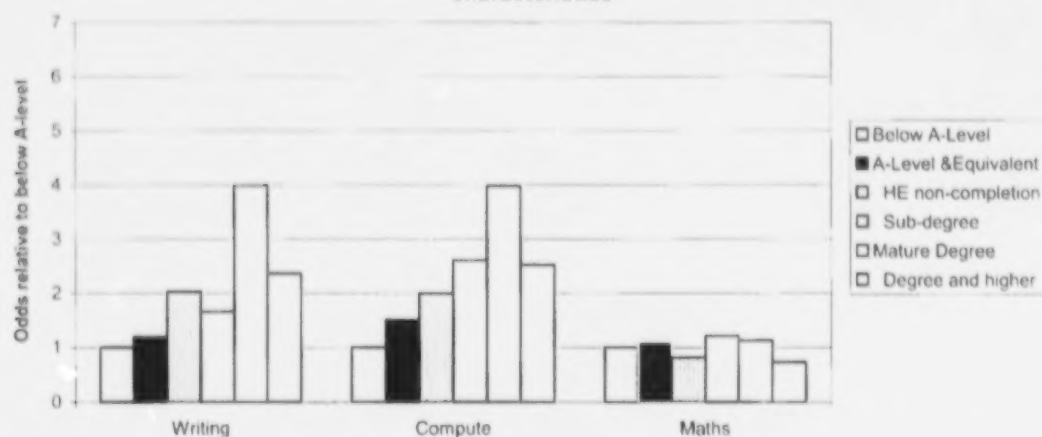


Figure 3.2.1b: Men - Improvements in writing, computing and maths skills in the past ten years, controlling for family origin, ability and occupational characteristics



Controlling for occupational experience reduced the odds ratios markedly. In particular the odds ratio for maths for men with sub-degree qualifications was no longer statistically significant. The odds ratios for graduate men were reduced to a level that was below those of the lowest education level (below A-level). Examination of the full set of odds ratios (Appendix 2 Table 3.1.2a) suggests that sizeable proportions of most graduate jobs (both managerial and professional) are associated with improvements in numeracy. Since occupation had been controlled for, the odds ratios reported for graduates are for those graduate jobs which were not associated with improvements in numeracy. It is important to

remember that the baseline is own achievement ten years ago, so that graduates in jobs (e.g. journalism), which do not require maths, may compare their current mathematical skills unfavourably with those possessed relatively shortly after leaving school.

Although the odds ratios for writing and computing were also sizeably reduced, it is still clear that a higher education effect on acquisition of these skills (having controlled for earlier ability) was sustained. This shows that although the improvement in computing and writing skills comes to a large extent through the employment graduates enter, higher education itself also contributes independently to improvements that continue after graduation. This applies most clearly to conventional graduates. For mature graduates, whose undergraduate studies would have typically occurred within the ten-year period assessed for skills improvement, the size of the effect of higher education as opposed to that of employment experience on the improvement is more difficult to establish unequivocally. However, the self-perceived skills enhancement of mature graduates is much greater (almost two-thirds greater, even with occupational controls) than that of conventional age graduates. This suggests that higher education must be responsible for at least some of the improvement. For the conventional graduates two effects can be more clearly posited: firstly that graduates acquire characteristics during their education, which are conducive to further learning; and secondly, that graduates enter occupations in which opportunities for further learning occur. These effects are not mutually exclusive; employers may wish to recruit easily trained, or already skilled employees, and it is often claimed that this is the case.

Generally, among graduates, computing seems most sensitive of all the skills to the occupational context. This is of particular interest, since Green et al (1999) have suggested that computing skills are particularly strongly associated with good quality jobs with strong likelihood of training and upgrading.

Women

Women reported less skill improvement than men in relation to writing (26%), computing (36%) and maths (24%), but similar higher education effects were apparent. It can be seen

from Figure 3.2.1c that women graduates had the highest odds ratios for improved writing and computing skills. Again the odds ratio was highest for mature graduates. Computing was less prominent in women's skill profile, while writing was more prominent (see Appendix 1). For maths there was again no significant effect.

Figure 3.2.1c: Women - Improvements in writing, computing and maths skills in the past ten years, controlling for family origin and ability

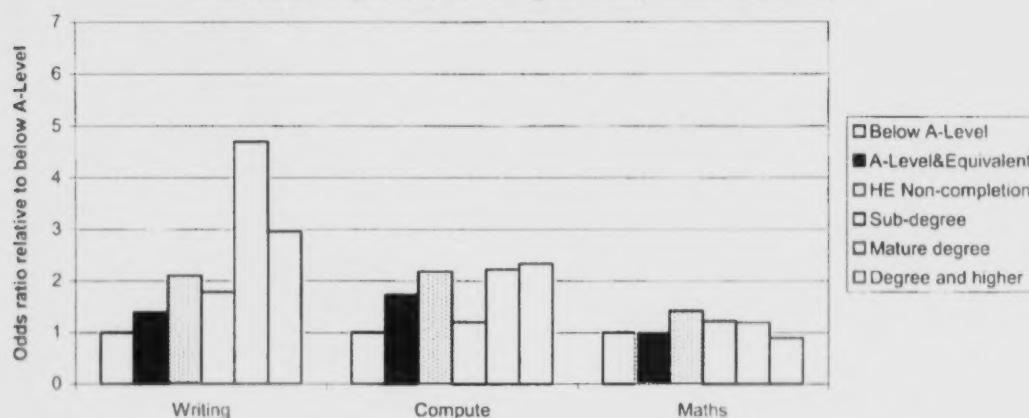
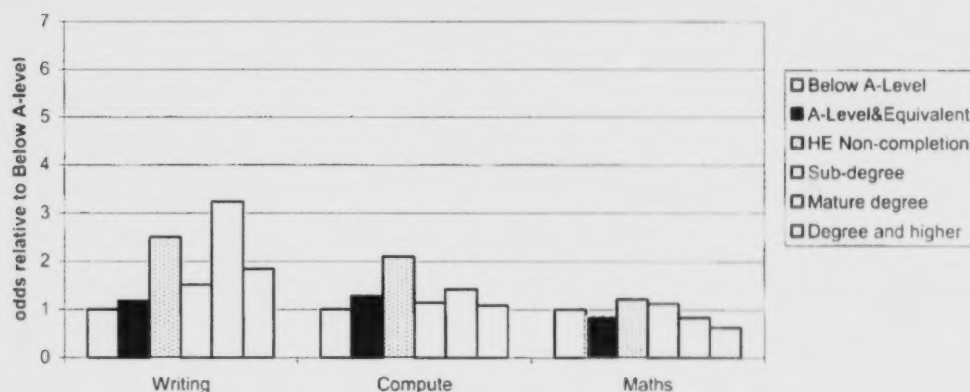


Figure 3.2.1d: Women - Improvements in writing, computing and maths skills in the past ten years, controlling for family origin, ability and occupational characteristics



Occupational experience also reduced the disparity between qualifiers in self-reported skills improvement (Figure 3.2.1d). The odds ratios suggest that, with the possible exception of the

mature graduates, most computing improvement can be attributed to occupational experience. However, graduate women (and non-completers) still report statistically significant improvements in writing compared with below A-level and A-level women, taking into account time out of the labour market and occupation.

Generally, so far as these *key skills* are concerned, it is clear that higher education facilitates further learning, above and beyond that specific to particular occupations and training. This is of major significance in identifying the contribution higher education makes to the employability of graduates. The experience of doing specialised "academic" courses is accompanied by acquisition of some of the key generic skills demanded in the modern labour market.

3.2.2 Improvements in social skills

Men

The social skills also all have employment relevance reflecting different aspect of the *key skill*, "team work".

The majority of men reported an improvement: organising skills, 52%; advising and counselling skills, 67%; teaching and instructing skills, 66%. The exception was "caring" skills, for which only 30% reported an improvement.

The effect of qualification level on self-reported improvements in the skills of organising, instructing/teaching, advising/counselling and caring are shown in Figure 3.2.2a. Gradients by qualifications can be seen in the skills of organising, instructing and advising. The odds ratio for organising was highest for graduates, while that for advising/counselling was highest for mature graduates. For both of these skills the proportions of graduates reporting improvements was significantly greater than the proportions of those with A-levels. While both mature graduates and conventional graduates had higher odds ratios for reported improvements in caring skills than the others, this was only statistically significant for the conventional graduates. Controlling for the occupational experience variables (Figure 3.2.2b)

reduced this difference so that it was no longer statistically significant; the key occupations showing the skills improvement were personal and protective services, and health and education professions. The odds ratios for instructional skills also seemed to be sensitive to occupational experience; however, all occupations were associated with increased *teaching* skill and this presumably reflects work experience *per se*. The odds ratios for the skills of advising and organising remained statistically significant for graduates, although reduced. The reduction seemed less for mature graduates than other graduates. It is possible that mature graduates have not yet settled into a specific career and in any case have less occupational experience as graduates. Generally, this suggests that higher education in itself helps develop these social skills (see e.g. Brown and Scase, 1994).

Figure 3.2.2a: Men - Improvements in social skills in the past ten years, controlling for family origin and ability

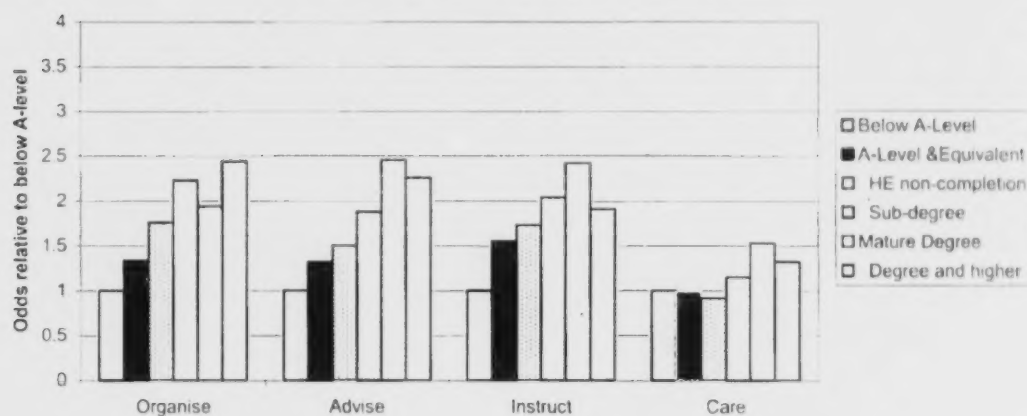
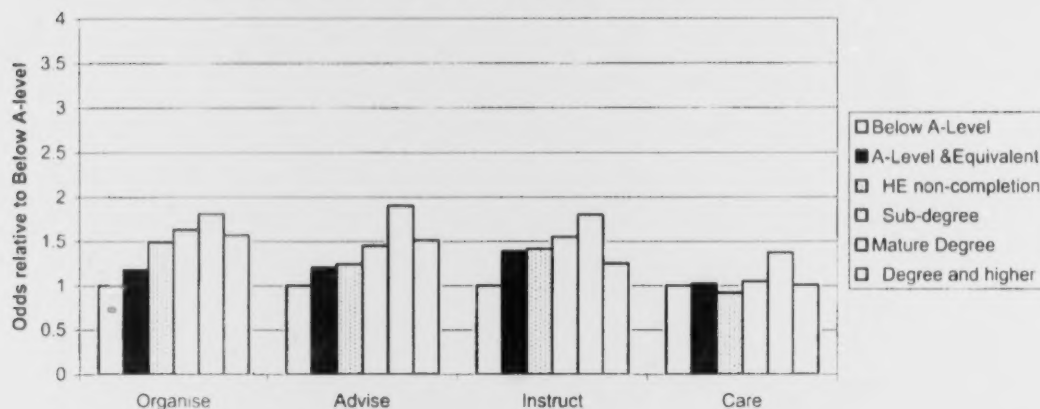


Figure 3.2.2b: Men - Improvements in social skills in the past ten years, controlling for family origin, ability and occupational characteristics



Women

A majority of women also reported improvements in the social skills of advising and counselling (68%), and teaching and instructing (68%). In contrast to men, only a minority reported improvement in organising skills (35%), whereas a majority reported improvement in caring skills (56%).

Odds ratios for self-rated improvements in social skills are shown in Figure 3.2.2c, controlling for family characteristics and ability. Again a gradient by qualifications can be seen, although higher education non-completers stand out in organising skills, an effect which remained statistically significant after occupation controls have applied. In general, higher proportions of graduates than A-level or less qualified people reported improvements in advising and teaching ($P < .05$). The effects for most skills, with the exception of caring, were much reduced by occupational controls (Figure 3.2.2d). As with men, they were reduced less for mature graduates than for other graduates, and similar factors may have been at work. Occupational experience seems to affect the self-assessment of caring skills less for mature and other graduates than for respondent with A-levels. This might suggest that there is something in the higher education experience itself that makes it possible for women to develop confidence in their caring skills independently of work experience.

Figure 3.2.2c: Women - Improvements in social skills in the past ten years, controlling for family origin and ability

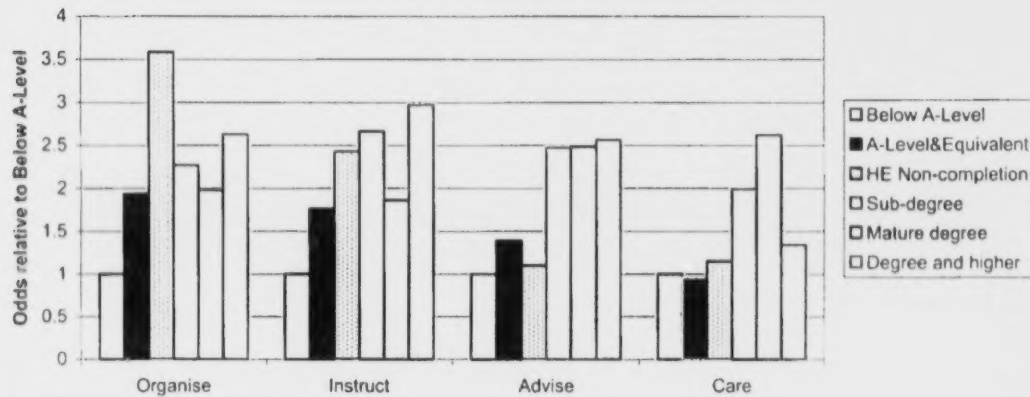
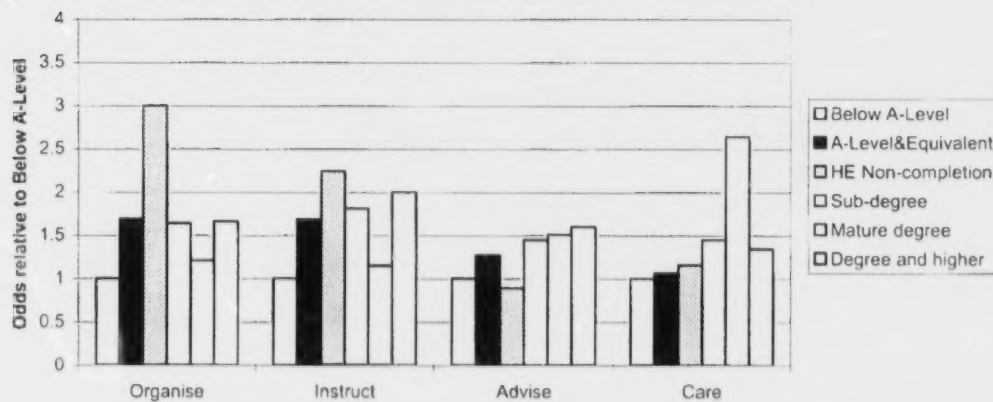


Figure 3.2.2d: Women - Improvements in social skills in the past ten years, controlling for family origin, ability and occupational characteristics



3.2.3 Conclusions

Although as we might expect, employment experience accounts to a large extent for skills differences between graduates and others, there are effects that can only be attributed to the higher education experience itself. This is particularly striking in relation to male graduates' acquisition of computing and writing skills and women mature graduates' acquisition of computing skills. Generally, however, men appear to benefit more in relation to the more

cognitive kinds of skills, and women in relation to the social skills of organising, teaching, instructing, advising and caring. These effects remain after controlling for occupational experience, ability and family origin. Social skills are now considered to be of growing importance in the labour market, underpinning team-work – a *key skill*. Here again, it appears that higher education has facilitated the development of confidence in the use of such skills, all of which imply an advantage in the labour market, compared to other women and to lower qualified men. Men compared with women tend to get advantages within employment in the form of more work-based training (Bynner, Morphy and Parsons, 1997). Higher education may be helping to redress the balance.

3.3 Health and vulnerability

3.3.1 Physical health

As noted earlier, it is important to take into account reverse causality in assessing the effects of education on health; that is to say it is likely that healthier children are more educationally successful and become healthier adults. The association of good health and education could be interpreted causally in either direction or might reflect some other unmeasured characteristic with a biological base. In addition, there is a large body of literature on research in the UK relating poorer health (Davey-Smith et al, 1990) and higher risk of accident (Whitehead and Dahlgren, 1991) to family socio-economic status. It was possible to control for these family characteristics – father's occupational class, mother's education and childhood poverty – in assessing the relative health of graduates compared to other qualifiers.

Just over one-third of men and exactly a third of women reported that they were in "excellent" health. Strong higher education effects as revealed by the odds ratios were apparent. Figures 3.3.1a and 3.3.1b show that when the controls were applied the effects persisted: excellent health is likely to be more commonly reported among graduates than among people with lower qualifications. The difference between graduates and respondents with just A-levels was statistically significant.

Independently of the higher education effect, manual class origins and childhood poverty were also associated with poorer self-rated health for both men and women (see Appendix 2, Tables 3.3.1a and 3.3.1b). This would merit further investigation, drawing on all measures of health collected earlier in the cohort members' lives, and other characteristics, such as maternal health. There is a wider range of such measures in BCS70, so when the new round of age 29 data becomes available in this study the focus of investigation might usefully move there.

Figure 3.3.1a: Likelihood of excellent health by qualification, with and without controls for family origin and ability - Men

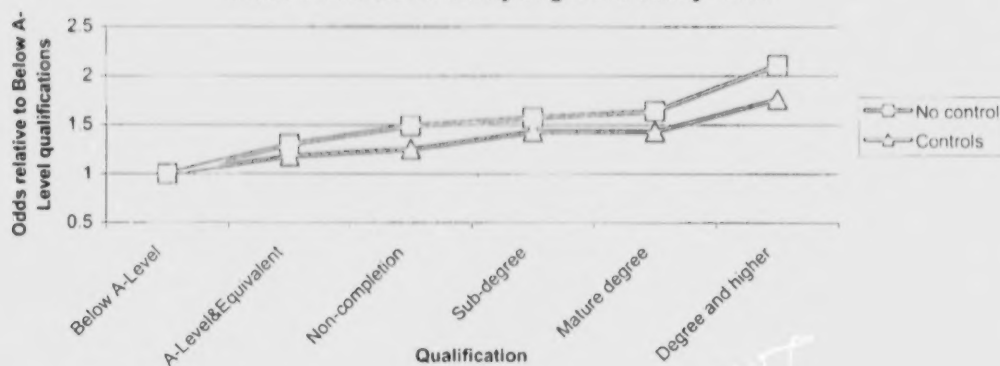
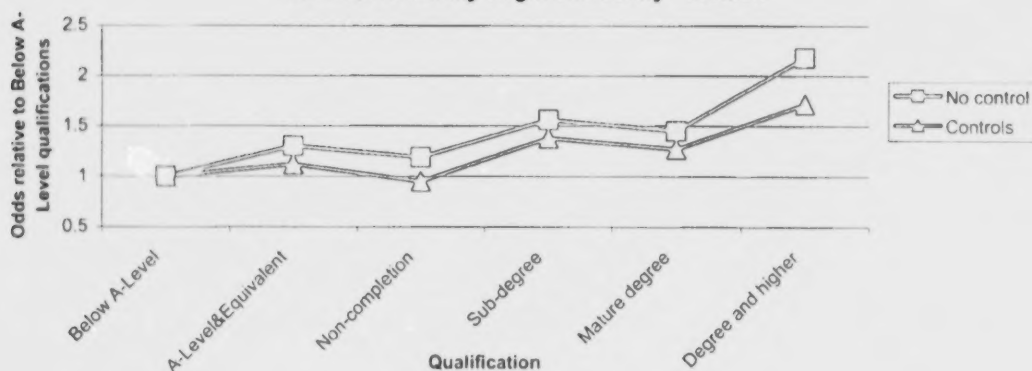


Figure 3.3.1b: Likelihood of excellent health by qualification, with and without controls for family origin and ability - Women



3.3.2 Physical health in the BCS70 cohort

Another extension to the enquiry was to compare the returns to health in BCS70 as well as NCDS. This enabled us to identify any effects of social change over the twelve years separating the two studies. Socio-economic status is a relative matter. It would be possible for the whole population to become more prosperous and healthy, while relative income and health inequalities remained. Although the full picture of higher education is less complete at age 26 than at age 33 in NCDS (the ages for the most recent surveys), it has been possible to make a preliminary investigation of the effects of higher education expansion on health relativities. Health inequalities by qualification were examined for the BCS70 cohort using a similar analysis to that for the NCDS cohort. About 12% of the NCDS age cohort entered the labour market as graduates in the late 1970s, while about 20% of the BCS70 age cohort entered the labour market as graduates in the early 1990s, so the graduate population increased by about 50%.

Overall 38% of men reported excellent health and 33% of women – surprisingly, much the same proportions as for the 33-year-olds in NCDS. Figures 3.3.2a and 3.3.2b show that graduates in this group in 1996 still retained a health advantage over lower-qualified people. The effects, as revealed by the odds ratios, were reduced by the control variables, and as with the NCDS sample the most important variables for both men and women were father's occupation and whether or not children had had free school meals. However, even controlling for family origin and ability, the differences between graduates and respondents with A-levels was still statistically significant for women ($P < .05$), and for men ($P < .10$). The differences in health statuses between BCS70 graduates and the less qualified are less marked than the differences between these groups in the NCDS sample. However that may be attributable to their younger age, with self-rated health deteriorating less rapidly for the more highly qualified.

Figure 3.3.2a: Likelihood of excellent health by qualification, with and without controls for family origin and ability - Men (BCS 1970)

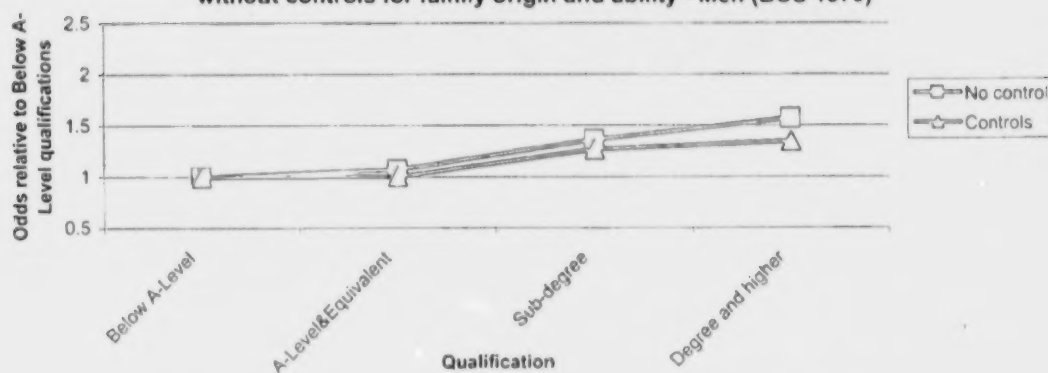
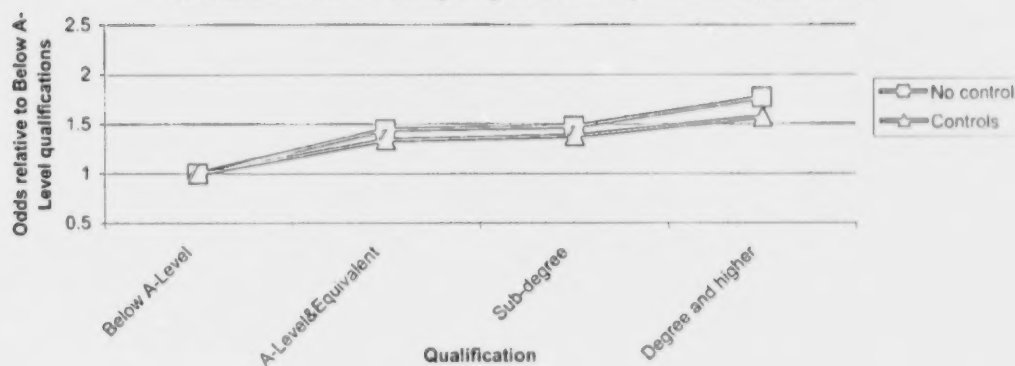


Figure 3.3.2b: Likelihood of excellent health by qualification, with and without controls for family origin and ability - Women (BCS 1970)



3.3.3 Psychological health

The measure of depression used in NCDS – the Malaise inventory – revealed large differences between men and women: 4% of men were classified as clinically depressed and 10% of women. The NCDS cohort of graduate men seemed to be relatively protected from psychological stress (Figure 3.3.3a). However, middle-class social origins and freedom from childhood poverty also contributed to this effect, which was much diminished when these factors were taken into account, as Figure 3.3.3a shows. (Also see Appendix 2, Table 3.3.3a.)

Even then, graduate men were less than half as likely to suffer depression as people with below A-level qualifications. Among women, the effects of childhood circumstances were more marked and, taking these factors into account, graduate women were no less likely to suffer from depression than the group without A-levels (Figure 3.3.3b and Appendix 2, Table 3.3.3b).

Figure 3.3.3a: Likelihood of depression by qualification, with and without controls for family origin and ability - Men

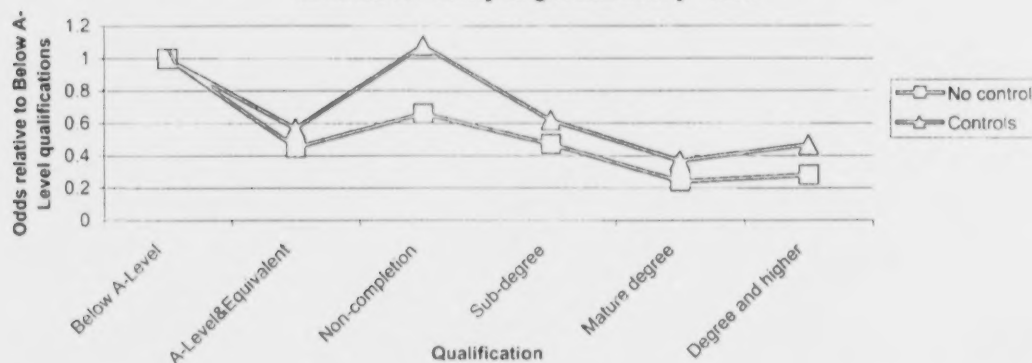
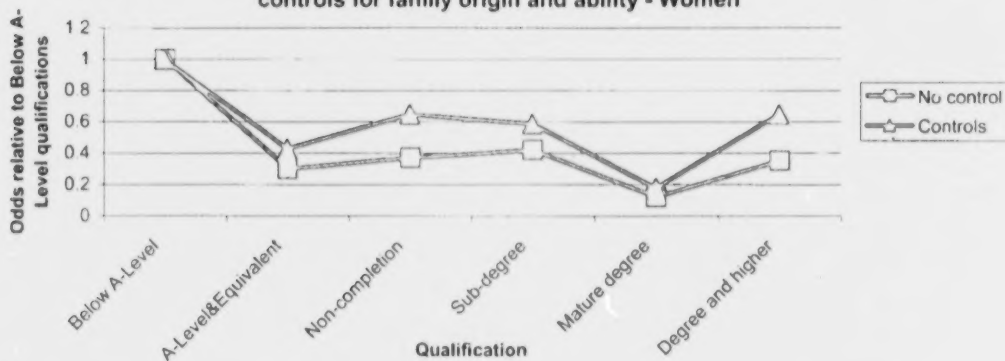


Figure 3.3.3b: Likelihood of depression by qualification, with and without controls for family origin and ability - Women

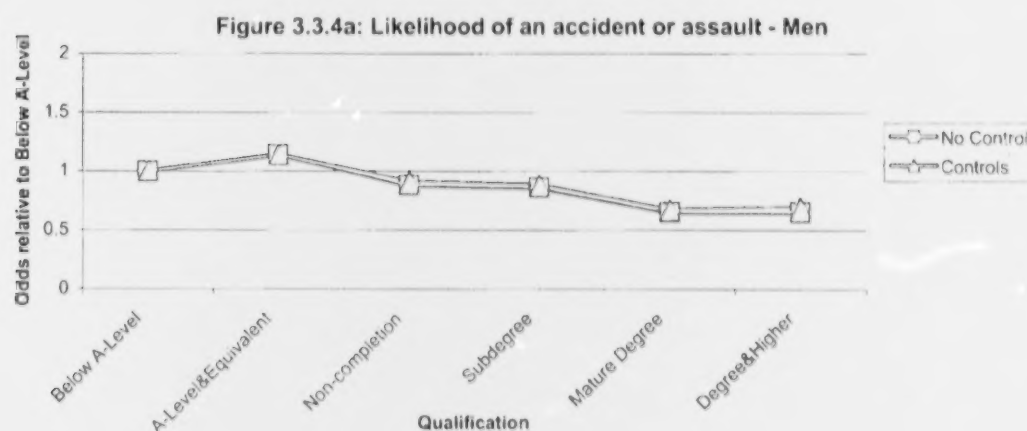


Men who started a higher education course but did not complete it were as depression-prone as the below A-level group, once the effects of family origin and ability had been controlled. Though strictly to be sure of this we would need to take into account how long ago the drop-out occurred. Mature women graduates seemed to be particularly well protected from depression. There is a complex of possible reasons for these effects, and stage in the life-

cycle may be important for mature women graduates, many of whom have passed the early stage of family formation, with its concomitant stresses and fatigue.

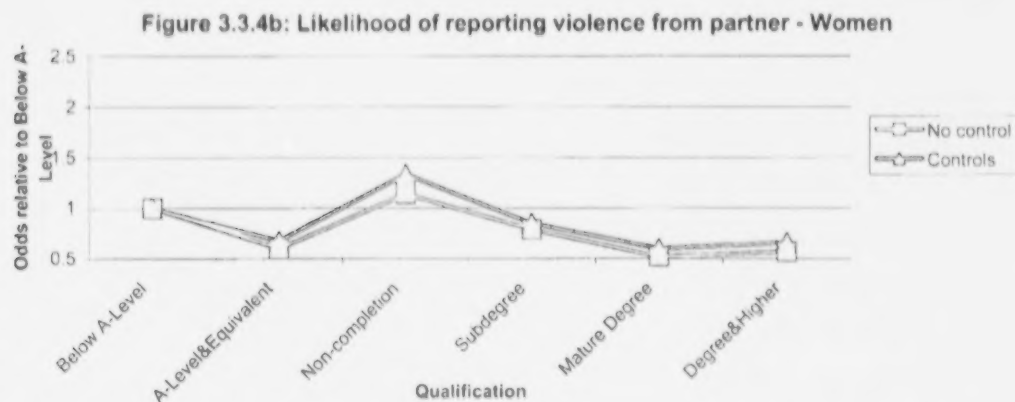
3.3.4 Physical vulnerability - accidents and assaults

Analyses of vulnerability to physical harm through accidents or assaults were carried out for men, since the numbers of women who had experienced these was low: 58% of men reported such experiences. Confirming previous findings, graduate men had lower odds ratios than those with A-levels for suffering an accident or assault. Controlling for childhood characteristics reduced the effect, but not below statistical significance (Figure 3.3.4a). Men from middle-class origins were less likely to suffer an accident or assault than men with A-levels or lower qualifications. Controlling for the social class of the current occupation reduced the effect markedly (Appendix 2, Table 3.3.4a). Both clerical workers and managerial/professional workers were less likely to suffer accidents and assaults.



Women who had suffered physical violence from a previous partner were also compared across the education levels, although again the frequencies for such experiences were low. Of those who had broken up with partners, 47% reported violence – 12% of the sample as a whole. The data were only available for those women who had separated from a previous partner. Graduate women and women with A-levels were least likely to have been a target of

marital violence (Figure 3.3.4b). However, the strongest effect in this analysis was that of measured ability at age 11, and the qualifications effect may simply denote the effects of intelligence, or these effects combined with assortative mating (see Appendix 2, Table 3.3.4b). Childhood poverty was also a statistically significant predictor of marital assaults. Notably the non-completing women appeared to be the most vulnerable to assault.



3.3.5 Conclusions

The analysis reveals strong gradients in physical and psychological health effects with higher education experience that are sustained in the BCS70 cohort. Graduates also seem to get a degree of protection from the likelihood of physical accidents (men) and the experience of violence from a partner (women). Women non-completers appear particularly vulnerable to this latter experience. It is possible that the gradients revealed are reflecting a "selection effect" whereby people entering higher education are already more healthy and less vulnerable than those who do not enter higher education. However, the variables that were used as controls are themselves strongly related to health status, so it is unlikely that selection effects account for the differences entirely. What seems probable is that the experience of higher education does produce a boost in well-being, not least because of the prospects it offers for more secure and satisfying jobs after graduation. Further work will be needed to identify precisely how this happens, especially by examining not only earlier health status but also the kinds of occupations that the graduates entered.

3.4 Parenting

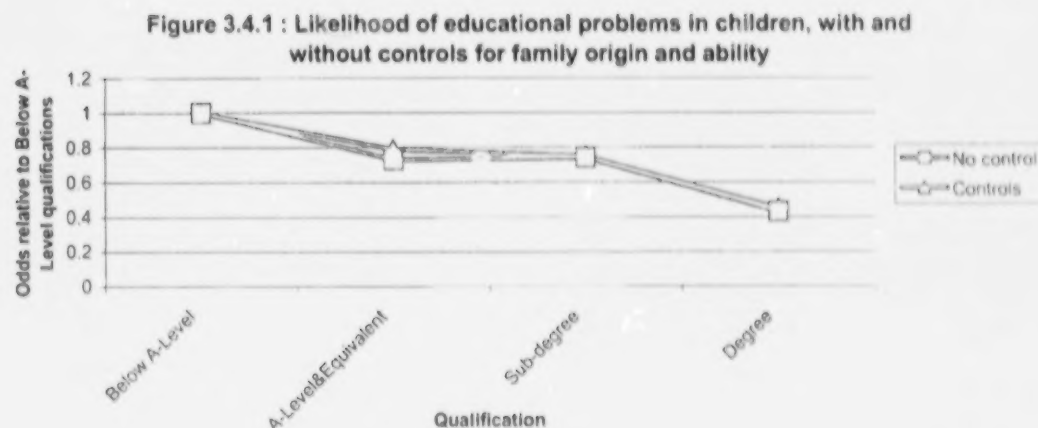
3.4.1 Educational problems of children

There is much evidence to suggest that parents' educational attainment is an important factor in children's educational attainment, especially at the bottom end of the educational scale, e.g. in the acquisition of the basic skills (Bynner and Steedman, 1995). There is less direct evidence about the distinctive educational benefits graduate parents bestow on their offspring. Again we need to ask what added value to parenting, if any, does higher education bring?

The NCDS gives the opportunity to examine educational outcomes over three generations. The 1995 10% sample was used to examine the relationship between respondents' qualifications and their children's educational problems. Men and women were combined for this analysis in order to increase sample size¹: 8% of men and 11% of women parents reported such problems. The higher education effects were controlled for childhood social class and poverty, mother's education, and for cognitive skills tests at age 11. The only respondent childhood factor to reach statistical significance was cognitive skill scores (Appendix 2, Table 3.4.1).

Confirming expectations, it can be seen from the odds ratios (Figure 3.4.1) that graduate parents were less likely than others to have children with educational problems.

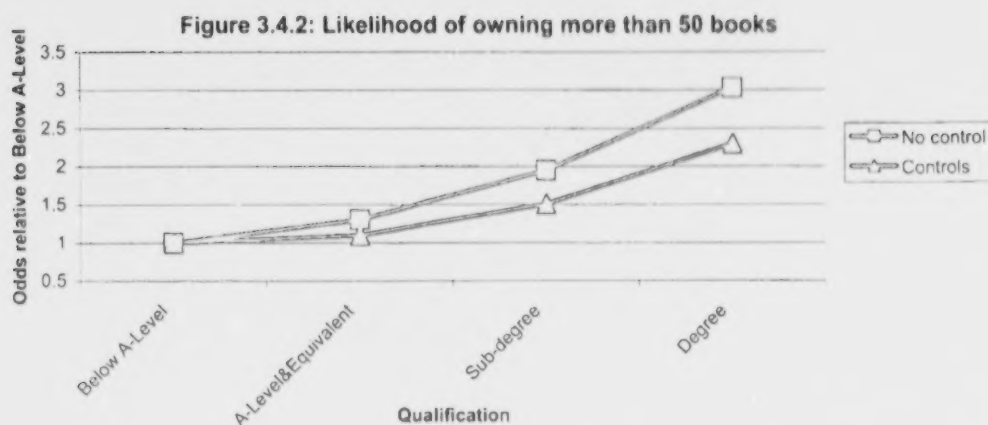
¹ It should be noted that 42% of (standard) graduate women had not had children by the age of 37. This is a decrease of 5% since 1991, when 47% of (standard) graduate women had not had children. About a third of these women had health or other problems preventing fertility, while another third did not wish to have children.



3.4.2 Books owned by children

A related effect is the number of books owned by children in the family (signifying the cultural capital of the parents). One-quarter of parents said that their children had fewer than 50 books. Again it can be seen that the children of graduate parents were more likely to own in excess of 50 books (Figure 3.4.2).

An analysis controlling for the number of children in the family and the age of the oldest child made little difference to the odds ratios reflecting these effects (see Appendix 2, Table 3.4.2). Again the only childhood factor to reach statistical significance was respondents' childhood test scores. However, in both analyses the effects of higher education remained statistically significant. While these results are preliminary, they suggest that higher education may have a role in breaking the cycle of educational disadvantage among the children of those people who make the transition into the higher education system. Their children are likely to gain more of the advantages in relative terms that they lacked.



3.4.3 Conclusions

Graduate families appeared to have significant educational benefits for children in so far as absence of educational problems and evidence of children's reading is concerned. This may of course be due again to the intergenerational transmission of educative childhood experiences on the part of the graduates themselves, but this is unlikely to be the whole explanation. Application of the controls for family background and earlier educational attainment suggest that it is the higher education experience itself which lays the foundations for educationally effective parenting. Graduates' children clearly have advantages over those of their non-graduate peers.

3.5 Civic engagement

There has been little research in the UK on the topic of civic engagement, and in particular on the relationship of higher education to various forms of civic activity. Carr-Hill (2000), reviewing the evidence from the USA, reports a strong relationship between education and voluntary work. However, he attributes this mainly to the higher socio-economic status of graduates.

3.5.1 Voting

56% of men and 55% of women said they had voted in four previous elections. Graduates were more likely to have voted than people without A-levels. However, the difference in the odds ratios between graduates and those with A-levels was not statistically significant in the case of people who graduated at the usual age (Figures 3.5a and 3.5b). Mature men graduates were more likely to vote than people with lower qualifications, an effect which remained statistically significant ($P < .10$) when family origin and ability had been controlled (Appendix 2, Tables 3.5.1a and 3.5.1b).

3.5.2 Engagement in voluntary organisations and community activity

14% of men were members of voluntary and community organisations and 9% were active in them. Women showed much more evidence of such civic engagement: 25% were members and 21% were active. As Figures 3.5a and 3.5b show, there is a clear gradient by qualifications for such activity. Graduates of both sexes had the highest membership and activity rates, with the exception of women non-completers. Controlling for childhood characteristics reduced the odds ratios but they remained statistically significant (Figures 3.5c and 3.5d). Parental social class, childhood poverty and ability tests also had statistically significant relationships with civic activity (Appendix 2, Tables 3.5.1a to 3.5.2d).

Among men graduates, mother's education level was also important, whereas this was not the case for women graduates. Perhaps these women with better-educated mothers had greater time commitments in their careers. However, women graduating at the conventional time had higher activity rates. A control variable for working in the public sector was also applied. Although this variable predicted civic involvement ($P < .001$), it did not change the odds ratios for various levels of qualification very much. Even with these controls the effects of higher education on civic engagement remained strong, with graduates generally being about *three times* more likely to be a current member or active member than respondents without A-levels and about *twice* as likely as those with A-levels. Mature graduate men were slightly more likely to be active than other graduates, and vice-versa for mature and other graduate women.

Figure 3.5a: Civic engagement (voting, current and active membership in voluntary organisations) by qualification - Men

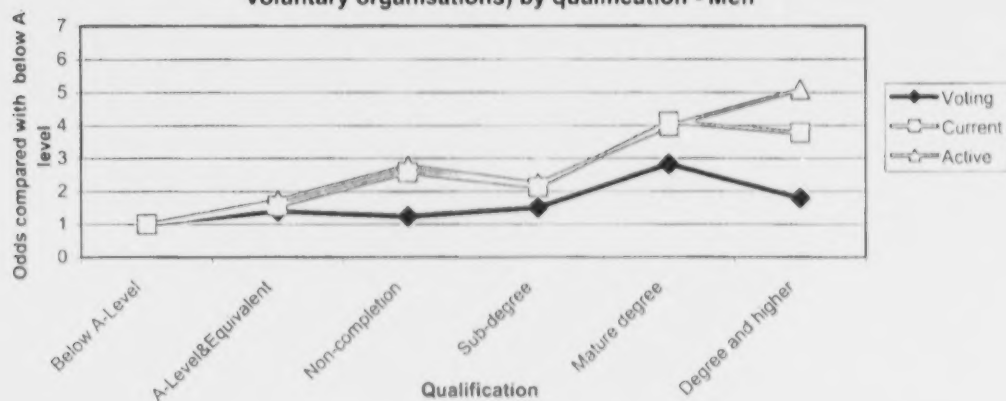


Figure 3.5b: Civic Engagement (Voting, current and active membership in voluntary organisations) by Qualification - Women

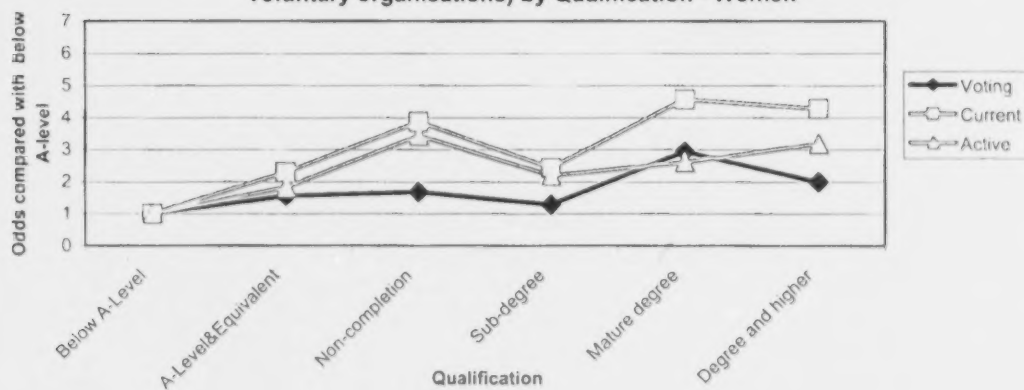


Figure 3.5c: Civic engagement (voting, current and active membership in voluntary organisations) by qualification, with controls - Men

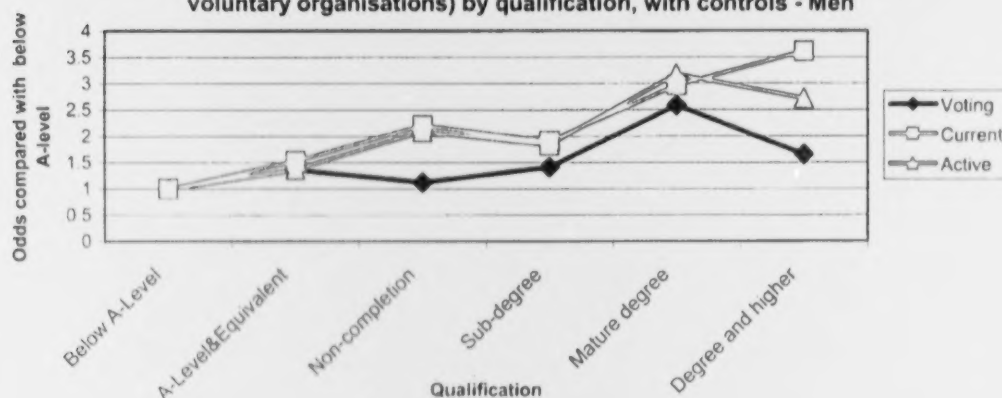
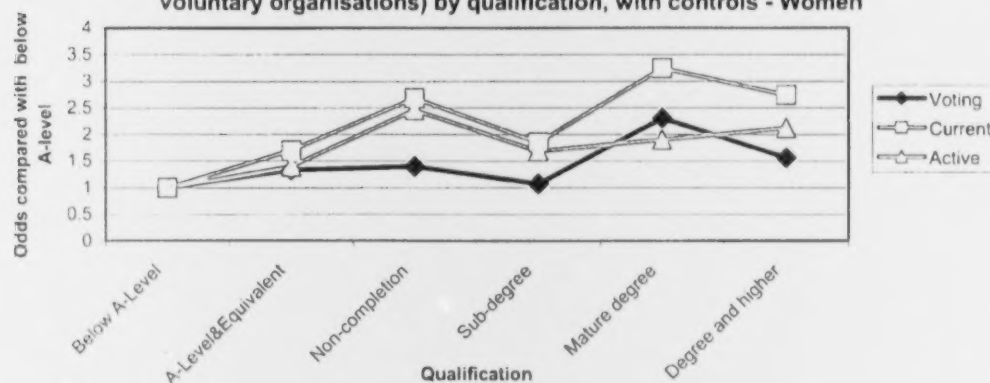


Figure 3.5d: Civic engagement (voting, current and active membership in voluntary organisations) by qualification, with controls - Women



3.5.3 Conclusions

The findings presented in this section give some of the most striking evidence of the social benefits accruing from higher education. Unlike some of the other outcomes considered so far – which, despite the controls, may still be subject to a selection bias – civic participation is essentially an adult activity that is unlikely to be affected markedly by pre-higher education experience.

Although mature students may well bring prior experience of civic engagement with them into higher education, this is not the case for ordinary undergraduates. Moreover, even for the mature graduates, when occupational experience is taken into account, the higher education benefit to civic participation remains.

3.6 Values and attitudes

3.6.1 Political cynicism

Attitudes were measured on continuous scales (see Table 2a) so, as noted in section 2, multiple regression was used as the analysis method. This produces -- as estimates of relationship -- regression coefficients, which show the unit change (on a scale of 1 to 5) in the outcome variable (this time an attitude score) associated with particular categories of the independent or predictor variables. To demonstrate the education gradients we plot these regression coefficients against education levels in an analogous way to the odds ratios.

Although, as we have seen, graduates were only slightly more likely to vote than people with lower qualifications, graduates of both sexes were markedly less cynical about politics (Figures 3.6a and 3.6b). Multiple regression analyses (Appendix 2, Tables 3.6.1a and 3.6.1b) show that the differences between graduates and A-level or below A-level remained statistically significant when controls for family origin, ability and public sector employment were applied (Figures 3.6c and 3.6d).

Figure 3.6a: Attitudes (gender and race equality, political cynicism) by qualification - Men

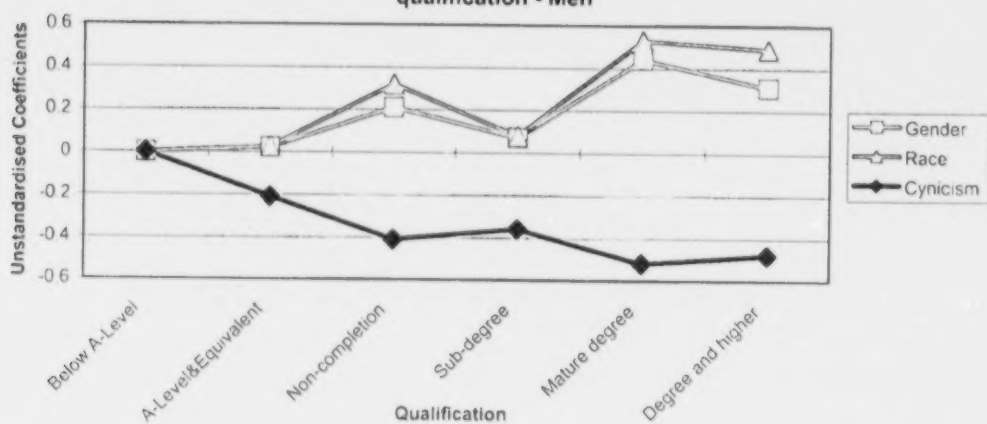


Figure 3.6b: Attitudes (gender and race equality, political cynicism) by qualification - Women

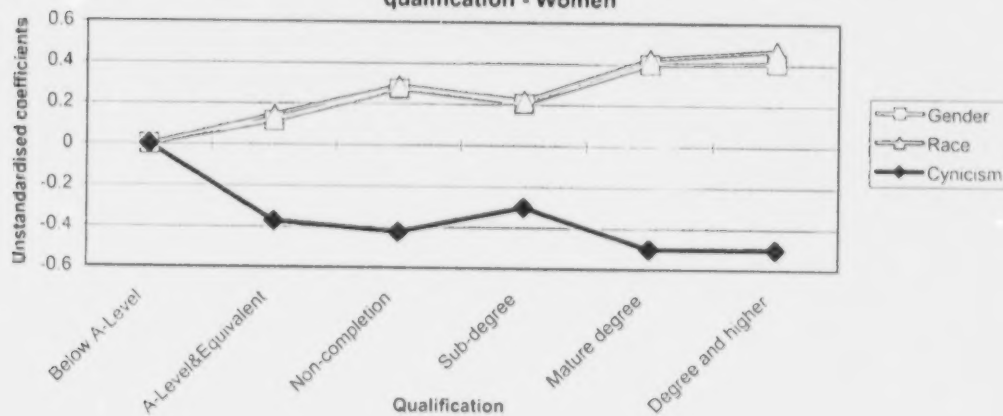


Figure 3.6c: Attitudes (gender and race equality, political cynicism) by qualification, with controls - Men

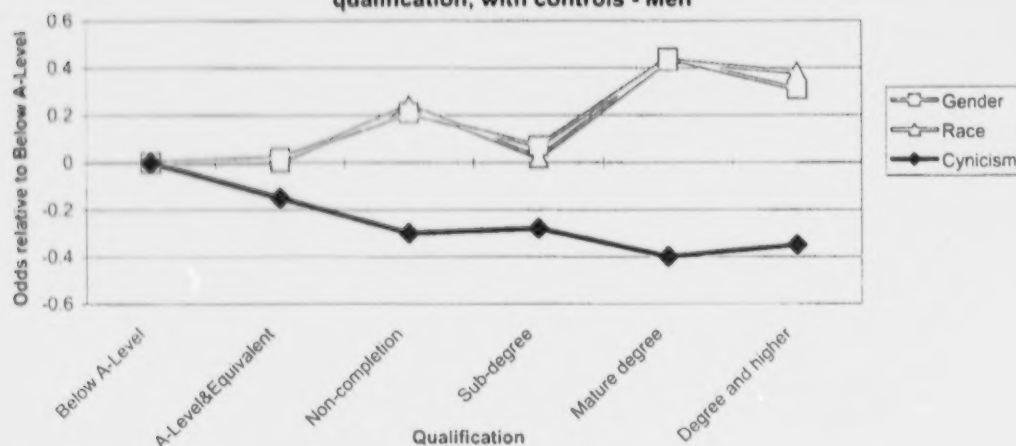
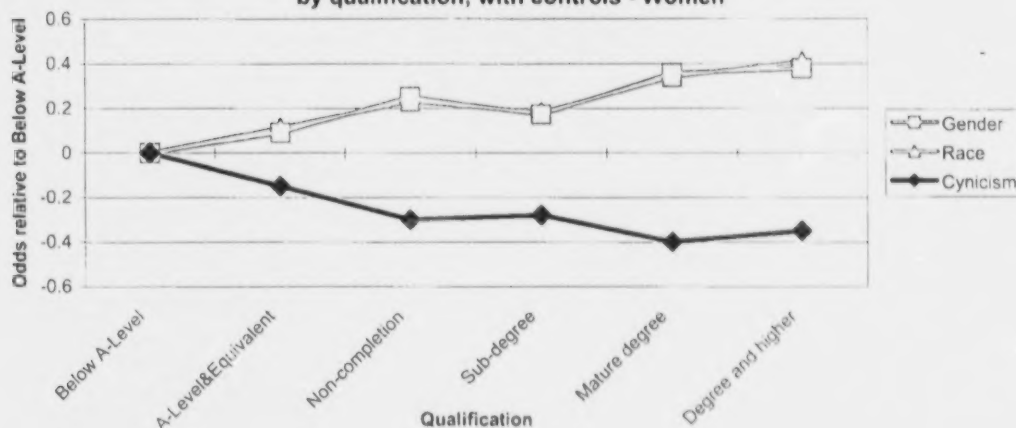


Figure 3.6d: Attitudes (gender and race equality, political cynicism) by qualification, with controls - Women



3.6.2 Gender and race equality

As Figures 3.6a to 3.6d show, graduates were notably less discriminatory in their attitudes to racial and sexual equality. This remained the case when controls for family origin, ability, public sector employment and ethnic origin were applied. There were statistically significant differences between graduates and people with lower qualifications (Appendix 2, Tables

3.6.2a to 3.6.2d). It seems that graduates show a distinctive profile of tolerant attitudes and civic engagement. In this sense, the aims of higher education in facilitating democratic values and citizenship appear to have been successful.

3.6.3 Conclusions

The findings for attitudes reinforce the conclusions of the previous section. Higher education appears to make a distinctive contribution to increased tolerance of diversity, to commitment to equal opportunities and to resistance to political alienation. Such values can be seen as lying at the heart of social cohesion, which underlines the significant contribution higher education makes to bringing this about. As for civic participation, it is difficult to see how these attitudes can be formed in more than an embryonic way before young people enter higher education. In so far as they have orientations in the directions indicated, these are likely to be related to the controls, especially those concerned with earlier educational ability. The fact that the higher education effect is sustained suggests that it is the experience itself that makes the difference. Mature students are particularly attuned to anti-discriminatory attitudes, and absence of political cynicism. Their attitudes are of course likely to be affected by community and employment experience (e.g. in public sector jobs) and this needs to be investigated further. But again, this is unlikely to provide the whole explanation. Higher education experience itself appears to be a significant factor.

4. Discussion and conclusions

The analysis has shown persisting effects of higher education in a range of social domains. In this final section we review the findings and consider what further analysis is needed to take our conclusions further.

Overall, the findings point to distinctive social benefits of higher education experience over and above those based in the family and in earlier education experience. Graduates not only enter high status occupations with good security and prospects but are less likely to experience unemployment. They also develop a range of skills through entry into certain occupations that

are likely to go on being enhanced. For the "key" modern employment skills of writing, numeracy and computing the improvement is particularly marked among mature graduates. The critical point about higher education is that the foundations are laid on which such skills improvement can be built. In the case of such skills as computing, organising and teaching, the gain is quite marked. This suggests that without the higher education experience, job entrants would be distinctly disadvantaged in relation to the skills needed – one of the (rare) examples, perhaps, of education delivering exactly what the labour market wants! Graduates, particularly women, continue to gain skills and confidence in their social performance to a greater extent than women with A-levels and those with lower qualifications. This suggests that there may be something integral to the higher education experience driving these effects. A more detailed investigation of the attitude data held on NCDS may throw light on this.

With respect to physical and psychological health, evidence of HE benefits is not quite so robust because of the problem of selection effects. But chances are that even if further controls were applied, the returns to higher education would be sustained. Graduates generally present themselves as healthier than non-graduates and also suffer less than others from depression. The exceptions are those who drop out of higher education, where high levels of depression – many years later - are evident. Graduates are also less vulnerable to accidents or assaults, an effect which may be partly attributable to their occupations.

More generally the results probably reflect the general sense of well-being that higher education appears to bestow on those that gain access to it. A sense of empowerment and enhanced self- efficacy is probably engendered, not least because of the attractive prospects that follow the higher education experience. Such qualities provide the underpinnings of good physical and psychological health.

It would be valuable to investigate these issues further, using the detailed data on childhood and maternal health held on NCDS. The health histories of mature graduates are particularly interesting here, since this gives some purchase on the effects of the higher education, particularly in relation to changes, if any, in lifestyles. Generally, it would be important to investigate the prior health states of different types of qualifier from the different cohort

studies and useful to investigate changes in life-style among graduates of different ages and different birth cohorts. Life-style, length of working hours and presence or absence of work-related stress may be key factors in investigating the relation of good or ill health to education. The children of graduates seem to be well placed educationally. The preliminary analyses reported here suggest that the higher education experience is sufficient to break the cycle of educational deprivation, an issue that could be investigated further. The next step would be to pursue these findings further using data on cognitive and behavioural development collected on the NCDS sample's children.

Finally in relation to civic participation, attitudes and values, the most direct benefits of higher education are revealed. Graduates are more likely to be involved in civic organisations and less likely to be politically cynical. Their attitudes are more tolerant. These are the outcomes that are most difficult to explain solely in terms of experience and attributes gained prior to entry into higher education. Political attitudes are formed only weakly during the teens, and civic participation is very limited for those of pre-university age. It is useful to interpret the results in terms of the traditional contribution higher education has made to the fostering of social capital among those who participate. Such social capital resides in the networks of social relations that characterise the higher education experience. The anti-discriminatory attitudes and positive appraisal of the political system that go with them are not limited to a small minority of "activists" but extend more generally across the student body. The long-term consequences are high levels of civic participation and democratic values that lie at the heart of social cohesion.

To take these conclusions further it would be of interest to take into account the academic discipline studied; the study of social science subjects, for example, may be a factor in civic engagement. Tolerant attitudes might be less sensitive to subject studies, since they can more readily be related to the values of rationality and evidence-based arguments endorsed by all academic disciplines. Although public sector employment explained some variance in both civic engagement and attitudes, it did not remove the higher education effect. However, it would be of interest to examine in more detail the class and sector of occupations, as in the skills analysis, to see if civic engagement and tolerant attitudes were particularly prominent in

some of them. Available time for civic engagement may be influenced by work hours and also by childcare responsibilities. The time resource raises another issue. There are also other forms of civic engagement than those examined here; for instance active membership of professional associations or trade unions. The effects on such outcomes could also usefully be assessed. Such factors as limited free time might not be expected to influence attitudes so greatly; nonetheless, this remains an empirical issue to be examined. For instance, membership of a voluntary association may change attitudes through endorsement of group attitudes, or simply through greater knowledge.

The problem of selection effects bedevils all attempts to model completely higher education effects in causal terms. This problem, especially in relation to health outcomes, points to the new analysis that needs to be done. As we have noted, further study of post higher education experience in relation to occupations entered would be worthwhile, as would be investigation of the type of higher education institution through which the degree was obtained, and the subjects studied for the degree. It is also possible that social change is impacting differentially on social outcomes in successive cohorts. Since the 1958 cohort was in a position to enter higher education in the late 1970s, entry to higher education has doubled, which might be expected to change the nature as well as some of the content of higher education experience. The preliminary analysis comparing the 1958 with the 1970 cohort, who began their higher education at the end of the 1980s, suggests that much the same kinds of relationships prevail. But more detailed analysis of the 1970 cohort study data is required to see to what extent, and in what direction, higher education effects are maintained. New data collected in current surveys of both the NCDS sample at age 41 and of the BCS70 sample at age 29, will be available by early 2001 and will also be an invaluable resource for the further analysis that is needed.

Overall, we have identified some wider benefits of higher education than those traditionally identified with it, and have established the base for a fruitful programme of further investigation in this field – one of the more neglected in education research. This further work is unlikely to undermine any of the conclusions drawn here in broad terms about the wider benefits. But it will help to refine them, especially in pinning down more precisely in

which sections of the graduate population particular benefits are most evident and in pointing to possible mechanisms for the higher education effect. Many of the benefits we have identified provisionally can of course translate directly into economic benefits to the nation. For example, raised skill levels and reduced health costs, in their different ways, both contribute to the economy. Effective parenting may also have an indirect economic payoff through enhancing the skills and prospects of future generations. In relation to civic activities and values, the justification would appear to lie elsewhere. In so far as the move towards a more cohesive and democratic society is considered desirable, higher education appears to have a significant part to play.

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Appendix 1 Frequency distributions

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Note: For outcome variables percentages are based on the sample with missing values omitted, so that the prevalence of the outcome can be shown. For the control variables the percent "missing" is included as this category was used as one of the controls in the analysis.

Frequencies for Outcome variables, by gender

Labour market

Occupational attainment		Men		Women	
Occupation		Frequency	%	Frequency	%
Manual & intermediate		3244	62	3568	67
Professional & managers		2020	38	1723	33
Missing values		295		508	
Total		5605	100	5799	100
Economic activity					
Employed		5051	90	3929	68
Not working		535	10	1851	32
Missing values		19		19	
Total		5605	100	5799	100
Part-time or full-time					
Not working		535	10	1851	32
Part-time		59	1	1842	32
Full-time		4992	89	2087	36
Missing		19		19	
Total		5605	100	5799	100

Skills

Improvements in skills over the past 10 years	Men		Women	
	Frequency	%	Frequency	%
Writing				
Not improved	3144	61	3998	74
Improved	1986	39	1415	26
Missing values	475		386	
N	5605	100	5799	100
Computing				
Not improved	2903	57	3433	65
Improved	2192	43	1891	36
Missing values	510		475	
N	5605	100	5799	100
Mathematical calculations				
Not improved	3254	65	4015	76
Improved	1787	35	1248	24
Missing values	564		536	
N	5605	100	5799	100
Organising				
Not improved	2439	49	3433	65
Improved	2590	52	1824	35
Missing values	576		542	
N	5605	100	5799	100
Advising and counselling				
Not improved	1674	33	1714	32
Improved	3381	67	3592	68
Missing values	550		493	
N	5605	100	5799	100
Teaching and instructing				
Not improved	1731	34	1712	32
Improved	3315	66	3571	68
Missing values	559		516	
N	5605	100	5799	100
Caring				
Not improved	3558	70	2371	44
Improved	1508	30	2980	56
Missing values	539		448	
N	5605	100	5799	100

Health and parenting

Variable	Men Frequency	%	Women Frequency	%
Self-assessed general health				
Good & poor	3557	64	3839	67
Excellent	1992	36	1884	33
Missing values	56		76	
Total	5605	100	5799	100
Depression				
Normal 0-7	4534	96	4497	90
Depressed 8-24	178	4	521	10
Missing values	893		781	
Total	5605	100	5799	100
Self-assessed general health – 1970				
Good & poor	2511	62	3269	67
Excellent	1559	38	1591	33
Missing values	18		28	
Total	4088	100	4888	100
Accidents and assaults				
No accident/assault	2338	42		
Accident/assault	3238	58		
Missing values	29			
Total	5605	100		
Violence from partner before break-up				
None			781	14
Violence			682	12
NA/missing			4336	
Total			5799	100
Children's educational problems				
No problems	475	64	596	69
Problems	42	6	74	9
Missing/NA	233		191	
Total	749	100	860	100
Number of books owned by children				
Fewer than 50	125	17	158	18
More than 50	401	54	529	62
Missing/NA	223		173	
Total	749	100	860	100

Civic engagement

Variables	Men Frequency	%	Women Frequency	%
Voted more than 4 times in past decade				
No	2258	44	2492	45
Yes	2916	56	3000	55
Missing	431		307	
Total	5605	100	5799	100
Current member of organisation				
No	4799	86	4344	76
Yes	772	14	1412	25
Missing	34		43	
Total	5605	100	5799	100
Active member of organisation				
No	5084	91	4559	79
Yes	512	9	1237	21
Missing	9		3	
Total	5605	100	5799	100

Attitudes: mean values and standard deviations

Gender		Equality: support for sex equality	Racism: anti- racism	Cynic: political cynicism
Male	Mean	3.72	3.71	2.85
	N	5131	5139	5161
	Std. deviation	0.55	0.74	0.81
Female	Mean	3.96	3.84	2.81
	N	5424	5416	5455
	Std. deviation	0.49	0.62	0.73
Total	Mean	3.84	3.78	2.83
	N	10555	10555	10616
	Std. deviation	0.53	0.68	0.77
Reliability		0.713	0.821	0.638

Frequencies for Control variables, by gender

Variable	Men Frequency	%	Women Frequency	%
Father's social class				
Manual	2140	39	2209	38
Intermediate	931	17	967	17
Service	708	13	722	13
Missing	1826	33	1901	33
Total	5605	100	5799	100
Mother's education				
Before/at 15	2336	42	2349	41
15+	1611	29	1755	30
Missing	1658	30	1695	29
Total	5605	100	5799	100
Parents' interest				
Very interested	3305	59	3244	55.9
Little or some	648	12	638	11
DK/missing	1652	30	1917	33.1
Total	5605	100	5799	100
Free school meals at 11				
No	4289	77	4394	75.8
Yes	409	7	465	8
Missing	907	16	940	16.2
Total	5605	100	5799	100
Over-crowded at 11				
No	4252	76	4400	76
Yes	502	28	519	9
Missing	851		880	15
Total	5605	100	5799	100
Ability tests at 11				
Low	1591	28	1313	23
Mid	1594	28	1729	30
High	1619	29	1936	33
Missing	801	14	821	14
Total	5605	100	5799	100
Length of unemployment 23/33				
None	4641	83	4737	82
1 year	250	5	202	4
2-3 years	167	3	116	2
4 or more years	171	3	73	1
Total	5229	93	5128	88
Missing	376	7	671	12
Total	5605	100	5799	100

Full-time housework 23/33

None			2687	46
1-3 years			882	15
4-6 years			866	15
7 or more years			693	12
Total			5128	88
Missing			671	12
			5799	100

Occupation

Unskilled	347	6	420	7
Semi-skilled	661	12	268	5
Personal services	320	6	1322	23
Protective services	224	4	32	1
Skilled	1359	24	151	3
Clerical	290	5	1426	25
Arts & sports	109	2	86	2
Other professional	202	4	142	2
Health & education	243	8	783	14
Science professions	473	9	101	2
Services: managers and owners	498	11	292	5
Management	613	95	288	5
Total	5339		5311	92
Missing	266		488	8.4
Total	5605	100	5799	100

Sector

Private	3210	57	2987	52
Public & charity	1222	22	1931	33
Missing	1173	21	881	15
Total	5605	100	5799	100

Variables for 1995 sub-sample

Variables		Frequency	%
Partner's education			
16 and under		785	49
17 to 19		313	20
20+		209	13
Missing/NA		302	19
Total		1609	100
Number of children			
	1	234	15
	2	645	40
3 or more		403	25
Total		1282	80
System		327	20
Total		1609	100

Average age of oldest child

Mean	N	Std. deviation
10.9686	1273	4.74

Variables for BCS70

Variable	Men		Women	
	Frequency	%	Frequency	%
Father's class				
Manual	946	23	1319	27
Clerical	208	5	271	6
Professional/managerial	786	19	986	20
Missing	2148	53	2312	47
Total	4088	100	4888	100
Mother's education				
Under 16	2305	56	2871	59
16 plus	1421	35	1650	34
Missing	362	9	367	8
Total	4088	100	4888	100
Free school meals at 10				
No	3261	80	3963	81
Yes	308	8	350	7
Total	3569	87	4313	88
System	519	13	575	12
Total	4088	100	4888	100
Overcrowded at 10				
Not overcrowded	3332	82	4019	82
Overcrowded	170	4	216	4
Missing	586	14	653	13
Total	4088	100	4888	100
Cognitive skill tests				
Low	989	24	989	24
Medium	935	23	935	23
High	1066	26	1066	26
Missing	1098	27	1098	27
Total	4088	100	4088	100

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Appendix 2 Multivariate analysis results

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Notes:

Model 1 gives the estimates without controls.

Model 2 gives the estimates with controls for family background.

Model 3 gives the estimates with controls for family background and occupational experience.

P=significance level, i.e. probability of a chance result

Table 3.1.1a: Men – Logistic regression equations for the likelihood of professional/managerial employment (those in employment only)

	Model 1	P	Model 2	P
Constant	0.24	<.001	0.12	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	2.26	<.001	1.80	<.001
Non-completers	12.31	<.001	7.98	<.001
Sub-degree	7.53	<.001	5.85	<.001
Mature degree	13.62	<.001	8.76	<.001
Degree & higher	41.00	<.001	24.11	<.001
Missing	0.90	Ns	1.05	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.44	<.001
Service			2.08	<.001
Missing			1.09	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			1.31	<.01
Missing			1.35	<.05
<i>Mother's interest at 11</i>				
Very interested			1	
Little or some interest			0.87	Ns
Missing			0.91	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			0.94	Ns
Missing			1.14	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			0.66	<.05
Missing			0.80	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.80	<.001
High			2.54	<.001
Missing			1.70	<.001
N	4805			
Loglikelihood with constant only	6472 (df 4804)			
Loglikelihood with model fitted	5023 (df 4798)		4830 (df 4784)	

Table 3.1.1b: Women – Logistic regression equations for the likelihood of professional/managerial employment (those in employment only)

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.21	<.001	0.15	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	2.47	<.001	2.21	<.001
Non-completers	6.90	<.001	6.05	<.001
Sub-degree	12.19	<.001	11.30	<.001
Mature degree	20.18	<.001	17.34	<.001
Degree & higher	32.44	<.001	27.60	<.001
Missing	1.62	Ns	1.56	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.06	Ns
Service			1.04	Ns
Missing			1.04	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			0.97	Ns
Missing			1.04	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Little or some interest			1.11	Ns
Missing			0.99	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			0.76	Ns
Missing			1.06	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			1.23	Ns
Missing			0.94	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.41	<.01
High			1.66	<.001
Missing			1.27	Ns
N	3819			
Loglikelihood with constant only	5010 (df 3818)			
Loglikelihood with model fitted	3777 (df 3812)		3752 (df 3798)	

Table 3.1.2a: Men – Logistic regression equations for the likelihood of not working (unemployment and economic inactivity)

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.15	<.001	0.17	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	0.39	<.001	0.50	<.001
Non-completers	0.68	Ns	1.08	Ns
Sub-degree	0.30	<.001	0.38	<.001
Mature degree	0.25	<.05	0.40	Ns
Degree & higher	0.29	<.001	0.46	<.001
Missing	0.94	Ns	0.84	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			0.69	<.05
Service			0.63	<.05
Missing			0.94	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			0.95	Ns
Missing			1.09	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Not very interested			0.98	Ns
Missing			1.02	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			1.47	<.01
Missing			2.14	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			1.83	<.001
Missing			0.47	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			0.63	<.001
High			0.51	<.001
Missing			1.11	Ns
N	5586			
Loglikelihood with constant only	3527 (df 5585)			
Loglikelihood with model fitted	3402 (DF 5579)		3297 (df 5565)	

Table 3.1.2b: Women – Logistic regression equations for the likelihood of not working (unemployment and economic inactivity)

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.55	<.001	0.62	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	0.83	<.05	0.87	Ns
Non-completers	0.85	Ns	0.89	Ns
Sub-degree	0.53	<.001	0.55	<.001
Mature degree	0.64	Ns	0.66	Ns
Degree & higher	0.51	<.001	0.53	<.001
Missing	0.97	Ns	0.99	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			0.88	Ns
Service			1.06	Ns
Missing			1.02	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			1.09	Ns
Missing			0.99	Ns
<i>Parental interest at 11</i>				
Not interested			1	
Very interested			0.92	Ns
Missing			0.99	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			0.95	Ns
Missing			0.77	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			1.17	Ns
Missing			1.12	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			0.80	<.01
High			0.79	<.01
Missing			0.98	Ns
N	5780			
Loglikelihood with constant only	7848 (df 5779)			
Loglikelihood with model fitted	7165 (DF 5773)		7144 (df 5759)	

Table 3.1.2c: Women – Logistic regression equations for the likelihood of working fulltime versus part-time work and not working

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.41	<.001	0.34	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	1.88	<.001	1.79	<.001
Non-completers	2.33	<.001	2.21	<.01
Sub-degree	2.04	<.001	1.94	<.001
Mature degree	3.67	<.001	3.51	<.001
Degree & higher	3.13	<.001	2.95	<.001
Missing	1.08	Ns	1.06	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.09	Ns
Service			0.98	Ns
Missing			0.91	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			1.09	Ns
Missing			0.99	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Not very interested			1.01	Ns
Missing			1.06	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			0.94	Ns
Missing			1.13	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			0.97	Ns
Missing			0.96	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.31	<.001
High			1.33	<.001
Missing			1.11	Ns
N	5780			
Loglikelihood with constant only	7560 (df 5779)			
Loglikelihood with model fitted	7321 (DF 5773)		7300 (df 5759)	

Table 3.2.1a: Men – Logistic regression equations for skill improvements in the last ten years – writing

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.45	<.01	0.46	<.01	0.40	<.01
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.23	<.01	1.26	<.01	1.19	<.05
Non-completers	2.30	<.001	2.41	<.001	2.02	<.01
Sub-degree	1.98	<.001	2.03	<.001	1.66	<.001
Mature degree	4.67	<.001	4.83	<.001	3.99	<.001
Degree & higher	2.92	<.001	3.02	<.001	2.35	<.001
Missing	1.20	Ns	1.99	Ns	1.25	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.11	Ns	1.06	Ns
Service			1.08	Ns	0.99	Ns
Missing			0.91	Ns	0.87	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.00	Ns	0.98	Ns
Missing			1.17	Ns	1.20	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.86	Ns	0.88	Ns
Missing			0.93	Ns	0.95	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			0.98	Ns	0.98	Ns
Free school meals			1.17	Ns	1.28	Ns
Over-crowded & free school meals			0.86	Ns	0.95	Ns
Missing			0.99	Ns	1.03	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			0.92	Ns	0.83	<.05
High			0.84	Ns	0.71	<.001
Missing			1.10	Ns	0.99	Ns

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Table 3.2.1a continued: Men – Logistic regression equations for skill improvements in the last ten years – writing

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.40	<.05
Protective services					2.76	<.001
Skilled manual					0.94	Ns
Clerical					1.57	<.01
Cultural industries					1.81	<.01
Other associated professions					1.68	<.05
Associated professions in health & education					1.16	Ns
Associated professions in science					1.87	<.001
Legal & business professions					1.99	<.01
Health & education professions					1.47	<.05
Science professions					1.94	<.001
Services: owners & managers					1.31	<.05
Corporate managers					2.69	<.001
Missing					1.59	<.01
<i>Unemployment</i>						
None					1	
One year					0.72	<.05
Two to three years					0.80	Ns
Four or more					0.81	Ns
Missing					0.93	Ns
N	5110					
Loglikelihood with constant fitted	6817 (df 5110)					
Loglikelihood with model fitted	6606 (df 5103)		6591 (df 5089)		6446 (df 5071)	

Table 3.2.1b: Men – Logistic regression equations for skill improvements in the last ten years – computing

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.38	<.001	0.22	<.001	0.13	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	2.05	<.001	1.71	<.001	1.50	<.001
Non-completers	4.81	<.001	3.20	<.001	1.99	<.01
Sub-degree	4.66	<.001	3.76	<.001	2.60	<.001
Mature degree	10.47	<.001	7.38	<.001	3.97	<.001
Degree & higher	7.07	<.001	4.48	<.001	2.52	<.001
Missing	0.98	Ns	1.05	Ns	1.05	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.33	<.001	1.25	<.05
Service			1.40	<.001	1.25	<.05
Missing			1.04	Ns	1.01	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.13	Ns	1.09	Ns
Missing			1.14	Ns	1.15	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.99	Ns	1.01	Ns
Missing			1.05	Ns	1.09	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			0.81	Ns	0.86	Ns
Free school meals			0.74	Ns	0.82	Ns
Over-crowded & free school meals			0.62	<.05	0.73	Ns
Missing			0.84	Ns	0.85	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.76	<.001	1.59	<.001
High			2.44	<.001	1.98	<.001
Missing			1.99	<.001	1.86	<.001

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Table 3.2.1b continued: Men – Logistic regression equations for skill improvements in the last ten years – computing

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.79	<.001
Protective services					2.33	<.001
Skilled manual					1.07	Ns
Clerical					7.24	<.001
Cultural industries					2.63	<.001
Other associated professions					2.99	<.001
Associated professions in health & education					0.96	Ns
Associated professions in science					10.62	<.001
Legal & business professions					2.22	<.01
Health & education professions					3.97	<.001
Science professions					5.50	<.001
Services: owners & managers					2.32	<.001
Corporate managers					5.74	<.001
Missing					2.69	<.001
<i>Unemployment</i>						
None					1	
One year					0.72	<.05
Two to three years					0.80	Ns
Four or more					0.94	Ns
Missing					0.67	<.05
N	5077					
Loglikelihood with constant fitted	6936 (df 5076)					
Loglikelihood with model fitted	6234 (df 5070)		6074 (df 5056)		5571 (df 5038)	

Table 3.2.1c: Men – Logistic regression equations for skill improvements in the last ten years – maths

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.53	<.001	0.54	<.001	0.48	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.10	Ns	1.16	Ns	1.09	Ns
Non-completers	0.83	Ns	0.94	Ns	0.81	Ns
Sub-degree	1.32	<.001	1.42	<.001	1.21	Ns
Mature degree	1.14	Ns	1.30	Ns	1.13	Ns
Degree & higher	0.78	<.01	0.90	Ns	0.73	<.01
Missing	1.09	Ns	1.08	Ns	1.05	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.99	Ns	0.94	Ns
Service			0.85	Ns	0.79	<.05
Missing			1.08	Ns	1.05	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.10	Ns	1.08	Ns
Missing			0.88	Ns	0.88	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.01	Ns	1.01	Ns
Missing			0.96	Ns	0.97	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.10	Ns	1.10	Ns
Free school meals			1.24	Ns	1.32	<.05
Over-crowded & free school meals			1.01	Ns	1.12	Ns
Missing			1.14	Ns	1.15	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.00	Ns	0.95	Ns
High			1.78	<.001	0.71	<.001
Missing			0.95	Ns	0.91	Ns

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Table 3.2.1c continued: Men – Logistic regression equations for skill improvements in the last ten years – maths

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.52	<.01
Protective services					0.88	Ns
Skilled manual					1.15	Ns
Clerical					1.47	<.01
Cultural industries					0.83	Ns
Other associated professions					1.76	<.01
Associated professions in health & education					0.83	Ns
Associated professions in science					1.43	<.01
Legal & business professions					2.97	<.05
Health & education professions					1.43	<.001
Science professions					1.46	<.05
Services: owners & managers					1.68	<.001
Corporate managers					1.83	<.001
Missing					1.19	Ns
<i>Unemployment</i>						
None					1	
One year					1.14	Ns
Two to three years					0.93	Ns
Four or more					0.49	<.001
Missing					0.91	Ns
N	5024					
Loglikelihood with constant fitted	6526 (df 5023)					
Loglikelihood with model fitted	6502 (df 5017)		6479 (df 5003)		6416 (df 4989)	

Table 3.2.1d: Women – Logistic regression equations for skill improvements in the last ten years – writing

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds Ratio	P
Constant	0.27	<.001	0.31	<.001	0.32	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.21	Ns	1.39	<.01	1.18	Ns
Non-completers	2.49	<.001	2.10	<.001	2.50	<.01
Sub-degree	1.60	<.001	1.78	<.001	1.51	<.001
Mature degree	4.04	<.001	4.69	<.001	3.23	<.001
Degree & higher	2.48	<.001	2.96	<.001	1.84	<.001
Missing	1.08	Ns	1.09	Ns	1.08	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.98	<.001	0.93	Ns
Service			1.09	<.001	1.02	Ns
Missing			0.96	<.001		Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.83	<.05	0.94	<.05
Missing			1.03	Ns	0.82	Ns
<i>Mother's interest at 11</i>						
Very interested			1.10		1	
Not very interested			1.09	Ns	0.10	Ns
Missing			1.13	Ns	1.14	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.55	Ns	1.10	Ns
Free school meals			1.44	<.01	1.18	<.001
Over-crowded & free school meals			1.45	Ns	1.70	<.05
Missing			0.74	<.001	1.57	<.001
<i>Ability tests at 11</i>						
Low			1		1	
Middle			0.74	<.01	1.42	<.001
High			0.74	<.01	0.68	<.001
Missing			0.57	<.001	0.68	<.001

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Table 3.2.1d continued: Women - Logistic regression equations for skill improvements in the last ten years - writing

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.33	<.05
Protective services					3.22	<.001
Skilled manual					1.53	Ns
Clerical					1.58	<.001
Cultural industries					2.35	<.01
Other associated professions					2.90	<.001
Associated professions in health & education					1.29	Ns
Associated professions in science					1.76	Ns
Legal & business professions					4.01	<.001
Health & education professions					1.98	<.001
Science professions					4.33	<.001
Services: owners & managers					2.16	<.001
Corporate managers					3.02	<.001
Missing					1.58	<.01
<i>Unemployment</i>						
None					1	
One year					1.05	Ns
Two to three years					0.64	Ns
Four or more					0.21	<.001
Missing					0.70	<.01
<i>Economic inactivity</i>						
None					1	
1-3 years					0.59	<.001
4-6 years					0.50	<.001
7 or more					0.46	<.001
Missing					Aliased	
N	5370					
Loglikelihood with constant fitted	6148 (df 5369)					
Loglikelihood with model fitted	6052 (df 5363)		5971 (df 5349)		5763 (df 5331)	

Table 3.2.1e: Women – Logistic regression equations for skill improvements in the last ten years – computing

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.41	<.001	0.23	<.001	0.12	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	2.20	<.001	1.72	<.001	1.28	<.05
Non-completers	3.03	<.001	2.18	<.01	2.10	<.01
Sub-degree	1.38	<.001	1.21	Ns	1.14	Ns
Mature degree	2.87	<.001	2.22	<.01	1.42	Ns
Degree & higher	3.32	<.001	2.33	Ns	1.48	<.01
Missing	0.91	Ns	0.86	Ns	1.08	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.14	Ns	1.00	Ns
Service			1.10	Ns	0.95	Ns
Missing			0.94	Ns	0.91	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.97	Ns	0.99	Ns
Missing			1.22	Ns	1.19	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.98	Ns	1.06	Ns
Missing			1.05	Ns	1.03	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			0.98	Ns	1.11	Ns
Free school meals			0.64	<.01	0.86	Ns
Over-crowded & free school meals			0.93	Ns	1.26	Ns
Missing			1.10	Ns	1.03	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.79	<.001	1.36	<.01
High			2.66	<.001	1.88	<.001
Missing			1.44	<.01	1.21	Ns

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Table 3.2.1e continued: Women - Logistic regression equations for skill improvements in the last ten years - computing

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.83	< .001
Protective services					2.31	Ns
Skilled manual					1.36	Ns
Clerical					9.72	< .001
Cultural industries					2.79	< .001
Other associated professions					8.64	< .001
Associated professions in health & education					1.90	< .01
Associated professions in science					15.02	< .001
Legal & business professions					7.67	< .001
Health & education professions					5.33	< .001
Science professions					7.98	< .001
Services: owners & managers					4.41	< .001
Corporate managers					12.14	< .001
Missing					2.61	< .001
<i>Unemployment</i>						
None						
One year					0.69	< .05
Two to three years					0.66	Ns
Four or more					0.54	Ns
Missing					0.37	< .001
<i>Economic inactivity</i>						
None					1	
1-3 years					0.62	< .001
4-6 years					0.47	< .001
7 or more					0.25	< .001
Missing					Aliased	
N	5281					
Loglikelihood with constant fitted	6857 (df 5280)					
Loglikelihood with model fitted	6633 (df 5274)		6492 (df 5260)		5549 (df 5239)	

Table 3.2.1f: Women – Logistic regression equations for skill improvements in the last ten years – maths

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.30	< .001	0.25	<.001	0.22	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.02	Ns	1.03	Ns	0.87	Ns
Non-completers	1.36	Ns	1.42	Ns	1.21	Ns
Sub-degree	1.21	< .05	1.22	< .05	1.12	Ns
Mature degree	1.19	Ns	1.19	Ns	0.83	Ns
Degree & higher	0.86	Ns	0.89	Ns	0.63	< .01
Missing	1.01	Ns	1.03	Ns	1.06	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.89	Ns	0.83	Ns
Service			0.88	Ns	0.81	Ns
Missing			0.94	Ns	0.91	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.93	Ns	0.93	Ns
Missing			1.06	Ns	1.05	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.14	Ns	1.17	Ns
Missing			1.14	Ns	1.16	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.24	Ns	1.34	< .05
Free school meals			1.10	Ns	1.23	Ns
Over-crowded & free school meals			1.05	Ns	1.15	Ns
Missing			1.02	Ns	1.00	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.22	< .05	1.08	Ns
High			1.20	Ns	1.01	Ns
Missing			0.92	Ns	0.85	Ns

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Table 3.2.1f continued: Women – Logistic regression equations for skill improvements in the last ten years – maths

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.36	<.05
Protective services					1.26	Ns
Skilled manual					1.10	Ns
Clerical					2.14	<.001
Cultural industries					2.21	<.01
Other associated professions					2.91	<.001
Associated professions in health & education					1.33	Ns
Associated professions in science					1.34	Ns
Legal & business professions					3.24	<.001
Health & education professions					2.16	<.001
Science professions					1.37	<.001
Services: owners & managers					3.17	ns
Corporate managers					2.93	<.001
Missing					1.51	<.05
<i>Unemployment</i>						
None					1	
One year					1.27	Ns
Two to three years					0.97	Ns
Four or more					0.53	Ns
Missing					0.54	<.001
<i>Economic inactivity</i>						
None					1	
1-3 years					0.78	<.01
4-6 years					0.62	<.001
7 or more					0.51	<.001
Missing					Aliased	
N	5221					
Loglikelihood with constant fitted	5695 (df 5220)					
Loglikelihood with model fitted	5687 (df 5214)		5670 (df 5200)		5485 (df 5182)	

Table 3.2.2a: Men – Logistic regression equations for skill improvements in the last ten years – organising

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.71	<.001	0.46	<.001	0.29	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.55	<.001	1.33	<.001	1.18	<.05
Non-completers	2.44	<.001	1.81	<.01	1.49	Ns
Sub-degree	2.64	<.001	2.21	<.001	1.63	<.001
Mature degree	2.57	<.001	1.94	<.01	1.81	<.05
Degree & higher	3.45	<.001	2.44	<.001	1.57	<.001
Missing	0.90	Ns	0.97	Ns	0.98	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.26	<.01	1.07	Ns
Service			1.60	<.001	1.36	<.01
Missing			1.57	<.001	1.37	<.05
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.14	Ns	1.08	Ns
Missing			0.80	Ns	0.85	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.17	Ns	1.25	<.05
Missing			1.03	Ns	1.05	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			0.78	Ns	0.78	Ns
Free school meals			0.68	<.01	0.82	Ns
Over-crowded & free school meals			0.74	Ns	0.91	Ns
Missing			1.04	Ns	1.07	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.59	<.001	1.45	<.001
High			1.71	<.001	1.19	<.001
Missing			1.29	<.05	2.22	Ns

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Table 3.2.2a continued: Men – Logistic regression equations for skill improvements in the last ten years – organising

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					2.22	<.001
Protective services					1.61	<.01
Skilled manual					1.62	<.001
Clerical					1.40	<.05
Cultural industries					3.17	<.001
Other associated professions					1.92	<.01
Associated professions in health & education					3.68	<.001
Associated professions in science					1.07	Ns
Legal & business professions					5.86	<.001
Health & education professions					4.15	<.001
Science professions					1.61	<.01
Services: owners & managers					10.15	<.001
Corporate managers					7.40	<.001
Missing					1.79	<.001
<i>Unemployment</i>						
None					1	
One year					0.53	<.001
Two to three years					0.75	Ns
Four or more					0.58	<.01
Missing					0.80	Ns
N	5012					
Loglikelihood with constant fitted	6943 (df 5011)					
Loglikelihood with model fitted	6668 (df 5005)		6549 (df 4991)		5999 (df 4973)	

Table 3.2.2b: Men – Logistic regression equations for skill improvements in the last ten years – instructing and teaching

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	1.40	<.001	1.18	Ns	0.86	Ns
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.66	<.001	1.55	<.001	1.39	<.001
Non-completers	1.98	<.01	1.72	Ns	1.42	Ns
Sub-degree	2.23	<.001	2.03	<.001	1.55	<.001
Mature degree	2.80	<.001	2.42	<.01	1.80	Ns
Degree & higher	2.28	<.001	1.94	<.001	1.25	Ns
Missing	0.90	Ns	0.93	Ns	0.93	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.01	Ns	0.95	Ns
Service			1.08	Ns	0.96	Ns
Missing			1.00	Ns	0.94	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.04	Ns	1.01	Ns
Missing			1.09	Ns	1.12	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.01	Ns	1.05	Ns
Missing			1.03	Ns	1.04	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.05	Ns	1.07	Ns
Free school meals			0.98	Ns	1.10	Ns
Over-crowded & free school meals			0.79	Ns	0.86	Ns
Missing			1.12	Ns	1.15	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.39	<.001	1.28	<.01
High			1.44	<.001	1.28	<.01
Missing			1.09	Ns	1.01	Ns

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Table 3.2.2b continued: Men – Logistic regression equations for skill improvements in the last ten years - instructing and teaching

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.67	<.001
Protective services					2.09	<.001
Skilled manual					1.46	<.001
Clerical					1.34	<.05
Cultural industries					1.72	<.05
Other associated professions					2.23	<.001
Associated professions in health & education					7.32	<.001
Associated professions in science					1.86	<.001
Legal & business professions					2.33	<.01
Health & education professions					5.94	<.001
Science professions					1.89	<.001
Services: owners & managers					2.12	<.001
Corporate managers					2.33	<.001
Missing					1.62	<.01
					0.91	<.01
<i>Unemployment</i>						
None					1	
One year					0.90	Ns
Two to three years					0.50	Ns
Four or more					0.86	<.001
Missing						Ns
N	5029					
Loglikelihood with constant fitted	6465 (df 5028)					
Loglikelihood with model fitted	6317 (df 5022)		6287 (df 5008)		6162 (df 4990)	

Table 3.2.2c: Men – Logistic regression equations for skill improvements in the last ten years – advising and counselling

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	1.51	<.001	1.16	Ns	0.92	Ns
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.43	<.001	1.32	<.001	1.20	<.05
Non-completers	1.66	<.05	1.48	Ns	1.24	Ns
Sub-degree	2.10	<.001	1.91	<.001	1.45	<.001
Mature degree	2.83	<.001	2.43	<.01	1.90	<.05
Degree & higher	2.60	<.001	2.25	<.001	1.51	<.01
Missing	1.01	Ns	1.08	Ns	1.09	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.09	Ns	1.01	Ns
Service			1.31	<.05	1.14	Ns
Missing			1.16	Ns	1.07	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.05	Ns	1.01	Ns
Missing			0.98	Ns	1.01	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.17	Ns	1.23	<.05
Missing			1.03	Ns	1.04	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.05	Ns	1.10	Ns
Free school meals			0.79	Ns	0.88	Ns
Over-crowded & free school meals			0.63	<.01	0.70	Ns
Missing			1.13	Ns	1.18	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.48	<.001	1.31	<.001
High			1.26	<.001	1.06	Ns
Missing			1.03	<.01	0.92	Ns

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Table 3.2.2c continued: Men – Logistic regression equations for skill improvements in the last ten years – advising and counselling

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.98	<.001
Protective services					3.47	<.001
Skilled manual					1.23	<.05
Clerical					1.55	<.01
Cultural industries					2.36	<.001
Other associated professions					1.89	<.01
Associated professions in health & education					9.57	<.001
Associated professions in science					1.59	<.01
Legal & business professions					3.12	<.001
Health & education professions					3.52	<.001
Science professions					1.73	<.01
Services: owners & managers					2.19	<.001
Corporate managers					2.95	<.001
Missing					1.35	Ns
<i>Unemployment</i>						
None					1	
One year					1.02	Ns
Two to three years					0.90	Ns
Four or more					0.44	<.001
Missing					0.86	Ns
N	5038					
Loglikelihood with constant fitted	6395 (df 5037)					
Loglikelihood with model fitted	6252 (df 5031)		6202 (df 5017)		6031 (df 5003)	

Table 3.2.2d: Men – Logistic regression equations for skill improvements in the last ten years – caring

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.39	<.001	0.37	<.001	0.37	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.00	Ns	0.98	Ns	1.02	Ns
Non-completers	0.91	Ns	0.89	Ns	0.92	Ns
Sub-degree	1.19	Ns	1.15	Ns	1.05	Ns
Mature degree	1.60	Ns	1.54	Ns	1.37	Ns
Degree & higher	1.41	<.001	1.32	<.01	1.01	Ns
Missing	1.23	Ns	1.25	Ns	1.28	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.98	Ns	0.10	Ns
Service			1.30	<.01	1.23	Ns
Missing			1.28	<.05	1.23	Ns
<i>Mother's education</i>						
By age 15			1			
Aged over 16			1.04	Ns	1.02	Ns
Missing			0.99	Ns	1.01	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.85	Ns	0.88	Ns
Missing			0.92	Ns	0.94	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.02	Ns	1.04	Ns
Free school meals			1.03	Ns	1.06	Ns
Over-crowded & free school meals			0.97	Ns	0.93	Ns
Missing			0.94	Ns	0.96	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.01	Ns	0.96	Ns
High			0.96	Ns	0.92	Ns
Missing			1.02	Ns	0.95	Ns

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Table 3.2.2d continued: Men - Logistic regression equations for skill improvements in the last ten years - caring

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.12	Ns
Protective services					3.17	<.001
Skilled manual					0.76	<.01
Clerical					0.79	Ns
Cultural industries					1.37	Ns
Other associated professions					0.84	Ns
Associated professions in health & education					9.62	<.001
Associated professions in science					0.72	Ns
Legal & business professions					1.32	Ns
Health & education professions					3.74	<.001
Science professions					0.86	Ns
Services: owners & managers					1.06	Ns
Corporate managers					0.98	Ns
Missing					1.24	Ns
<i>Unemployment</i>						
None					1	
One year					0.92	Ns
Two to three years					1.39	Ns
Four or more					1.20	Ns
Missing					1.09	Ns
N	5048					
Loglikelihood with constant fitted	6143 (DF 5047)					
Loglikelihood with model fitted	6123 (df 5041)		6104 (df 5027)		5891 (df 5009)	

Table 3.2.2e: Women – Logistic regression equations for skill improvements in the last ten years – organise

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.36	<.001	0.27	<.001	0.17	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	2.22	<.001	1.94	<.001	1.69	<.001
Non-completers	4.28	<.001	3.58	<.001	3.00	<.001
Sub-degree	2.51	<.001	2.26	<.001	1.64	<.001
Mature degree	2.26	<.01	1.98	<.01	1.21	Ns
Degree & higher	3.24	<.001	2.64	<.001	1.66	<.001
Missing	1.10	Ns	1.07	Ns	0.99	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.26	<.01	1.19	Ns
Service			1.14	Ns	1.08	Ns
Missing			0.96	Ns	0.90	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.14	Ns	1.13	Ns
Missing			1.22	Ns	1.26	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.99	Ns	0.97	Ns
Missing			0.93	Ns	0.95	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.01	Ns	1.06	Ns
Free school meals			1.10	Ns	1.15	Ns
Over-crowded & free school meals			0.89	Ns	0.92	Ns
Missing			1.08	Ns	1.06	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.18	Ns	1.10	Ns
High			1.43	<.001	1.34	Ns
Missing			1.24	Ns	1.22	Ns

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Table 3.2.2e continued: Women – Logistic regression equations for skill improvements in the last ten years – organising

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.99	<.001
Protective services					2.85	<.001
Skilled manual					1.52	Ns
Clerical					1.71	<.001
Cultural industries					2.84	<.001
Other associated professions					2.95	<.001
Associated professions in health & education					2.66	<.001
Associated professions in science					1.50	Ns
Legal & business professions					5.20	<.001
Health & education professions					3.03	<.001
Science professions					2.00	<.05
Services: owners & managers					10.54	<.001
Corporate managers					4.54	<.001
Missing					1.74	<.001
<i>Unemployment</i>						
None					1	
One year					1.10	Ns
Two to three years					0.96	Ns
Four or more					0.54	Ns
Missing					0.72	<.01
<i>Economic inactivity</i>						
None					1	
1-3 years					0.80	<.05
4-6 years					0.82	<.05
7 or more					0.54	<.001
Missing					Aliased	
N	5215					
Loglikelihood with constant fitted	6729 (df 5214)					
Loglikelihood with model fitted	6452 (df 5208)		6416 (df 5194)		6087 (df 5173)	

Table 3.2.2f: Women – Logistic regression equations for skill improvements in the last ten years – instructing and teaching

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	1.51	<.001	1.13	ns	0.59	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.95	<.001	1.75	<.001	1.68	<.001
Non-completers	2.70	<.01	2.42	<.01	2.24	<.05
Sub-degree	2.88	<.001	2.67	<.001	1.81	<.001
Mature degree	2.09	<.05	1.86	Ns	1.15	Ns
Degree & higher	3.35	<.001	2.96	<.001	2.00	<.001
Missing	1.10	Ns	1.10	Ns	1.07	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.95	Ns	0.94	Ns
Service			0.98	Ns	0.98	Ns
Missing			0.83	Ns	0.81	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.10	Ns	1.01	Ns
Missing			1.22	Ns	1.25	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.08	Ns	1.04	Ns
Missing			1.01	Ns	1.02	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.19	Ns	1.22	Ns
Free school meals			1.01	Ns	0.99	Ns
Over-crowded & free school meals			0.95	Ns	1.02	Ns
Missing			1.05	Ns	1.06	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.52	<.001	1.44	<.001
High			1.62	<.001	1.53	<.001
Missing			1.20	Ns	1.14	Ns

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Table 3.2.2f continued: Women – Logistic regression equations for skill improvements in the last ten years – instructing and teaching

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.86	<.001
Protective services					2.63	<.05
Skilled manual					1.21	Ns
Clerical					1.54	<.001
Cultural industries					1.42	Ns
Other associated professions					2.90	<.001
Associated professions in health & education					3.99	<.001
Associated professions in science					1.15	Ns
Legal & business professions					1.35	Ns
Health & education professions					5.68	<.001
Science professions					1.45	Ns
Services: owners & managers					2.07	<.001
Corporate managers					2.71	<.001
Missing					1.36	<.05
<i>Unemployment</i>						
None					1	
One year					1.18	Ns
Two to three years					0.86	Ns
Four or more					0.60	Ns
Missing					1.16	Ns
<i>Economic inactivity</i>						
None					1	
1-3 years					1.45	<.001
4-6 years					1.63	<.001
7 or more					1.64	<.001
Missing					Aliased	
N	5240					
Loglikelihood with constant fitted	6614 (df 5239)					
Loglikelihood with model fitted	6375 (df 5233)		6333 (df 5219)		6161 (df 5205)	

Table 3.2.2g: Women – Logistic regression equations for skill improvements in the last ten years – advising and counselling

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds Ratio	P
Constant	1.61	< .001	1.22	< .05	0.93	Ns
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.52	< .001	1.38	< .01	1.27	< .05
Non-completers	1.21	Ns	1.08	Ns	0.89	Ns
Sub-degree	2.62	< .001	2.44	< .001	1.45	< .001
Mature degree	2.75	< .01	2.48	< .01	1.51	Ns
Degree & higher	2.89	< .001	2.53	< .001	1.60	< .01
Missing	0.83	Ns	0.81	Ns	0.77	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.94	Ns	0.91	Ns
Service			1.14	Ns	1.11	Ns
Missing			0.98	Ns	0.96	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.94	Ns	0.94	Ns
Missing			1.09	Ns	1.11	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.02	Ns	0.99	Ns
Missing			1.01	Ns	1.02	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			1.12	Ns	1.15	Ns
Free school meals			0.96	Ns	0.97	Ns
Over-crowded & free school meals			1.09	Ns	1.17	Ns
Missing			1.22	< .05	1.21	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.44	< .001	1.37	< .001
High			1.53	< .001	1.47	< .001
Missing			1.09	Ns	1.07	Ns

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Table 3.2.2g continued: Women – Logistic regression equations for skill improvements in the last ten years – advising and counselling

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.73	<.001
Protective services					4.07	<.01
Skilled manual					1.22	Ns
Clerical					1.49	<.001
Cultural industries					0.88	Ns
Other associated professions					3.90	<.001
Associated professions in health & education					4.56	<.001
Associated professions in science					0.94	Ns
Legal & business professions					2.28	<.05
Health & education professions					3.48	<.001
Science professions					1.49	Ns
Services: owners & managers					2.36	<.001
Corporate managers					2.50	<.001
Missing					1.35	<.05
<i>Unemployment</i>						
None					1	
One year					1.16	Ns
Two to three years					0.63	Ns
Four or more					0.61	Ns
Missing					0.79	<.05
<i>Economic inactivity</i>						
None					1	
1-3 years					0.87	Ns
4-6 years					0.86	Ns
7 or more					0.81	<.05
Missing					Aliased	
N	5263					
Loglikelihood with constant fitted	6620 (df 5262)					
Loglikelihood with model fitted	6440 (df 5256)		6403 (df 5242)		6242 (df 5221)	

Table 3.2.2h: Women – Logistic regression equations for skill improvements in the last ten years – caring

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds Ratio	P
Constant	1.09	<.05	1.06	Ns	0.60	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	0.99	Ns	0.95	Ns	1.06	Ns
Non-completers	1.18	Ns	1.12	Ns	1.16	Ns
Sub-degree	2.03	<.001	1.98	<.001	1.45	<.001
Mature degree	2.84	<.01	2.68	<.01	2.64	<.01
Degree & higher	1.41	<.001	1.34	<.01	1.34	<.05
Missing	1.22	Ns	1.23	Ns	1.17	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			0.90	Ns	0.92	Ns
Service			0.98	Ns	1.04	Ns
Missing			0.94	Ns	0.96	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.01	Ns	1.01	Ns
Missing			1.04	Ns	1.07	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.00	Ns	0.94	Ns
Missing			0.96	Ns	0.96	Ns
<i>Poverty at 11</i>						
Not over-crowded or free school meals			1		1	
Over-crowded			0.10	Ns	0.98	Ns
Free school meals			0.96	Ns	0.87	Ns
Over-crowded & free school meals			1.06	Ns	1.06	Ns
Missing			0.92	Ns	0.94	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.09	Ns	1.13	Ns
High			1.15	Ns	1.25	<.05
Missing			1.08	Ns	1.09	Ns

/continued

Table 3.2.2h continued: Women – Logistic regression equations for skill improvements in the last ten years – caring

	Model 1		Model 2		Model 3	
	Odds ratio	P		P	Odds ratio	P
<i>Occupation</i>						
Semi-skilled and unskilled					1	
Personal services & retail					1.68	<.001
Protective services					1.56	Ns
Skilled manual					1.04	Ns
Clerical					0.97	Ns
Cultural industries					0.66	Ns
Other associated professions					1.01	Ns
Associated professions in health & education					3.78	<.001
Associated professions in science					0.58	Ns
Legal & business professions					0.93	Ns
Health & education professions					2.15	<.001
Science professions					0.84	Ns
Services: owners & managers					0.83	Ns
Corporate managers					0.70	<.05
Missing					1.29	Ns
<i>Unemployment</i>						
None					1	
One year					1.30	Ns
Two to three years					0.88	Ns
Four or more					0.77	Ns
Missing					1.55	
<i>Economic inactivity</i>						
None					1	
1-3 years					1.95	<.001
4-6 years					1.84	<.001
7 or more					1.96	<.001
Missing					aliased	
N	5308					
Loglikelihood with constant fitted	7292 (df 5307)					
Loglikelihood with model fitted	7205 (df 5301)		7198 (df 5287)		6872 (df 5266)	

Table 3. 3.1a: Men – Logistic regression equations for the likelihood of reporting excellent health

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.45	<.001	0.37	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	1.30	<.001	1.19	<.05
Non-completers	1.49	Ns	1.25	Ns
Sub-degree	1.57	<.001	1.43	<.001
Mature degree	1.64	<.05	1.43	Ns
Degree & higher	2.10	<.001	1.76	<.001
Missing	0.76	Ns	1.19	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.19	<.05
Service			1.04	Ns
Missing			1.19	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			1.11	Ns
Missing			0.85	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Little or some Interest			1.05	Ns
Missing			1.04	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			1.04	Ns
Missing			0.70	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			0.74	<.05
Missing			1.27	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.24	<.01
High			1.37	<.001
Missing			1.14	Ns
N	5549			
Loglikelihood with constant only	7245 (df 5548)			
Loglikelihood with model fitted	7148 (df 5542)		7109 (df 5528)	

Table 3.3.1b: Women – Logistic regression equations for the likelihood of reporting excellent health

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.40	<.001	0.32	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	1.30	<.001	1.12	Ns
Non-completers	1.19	Ns	0.95	Ns
Sub-degree	1.56	<.001	1.38	<.001
Mature degree	1.45	Ns	1.27	Ns
Degree & higher	2.18	<.001	1.72	<.001
Missing	1.14	Ns	1.10	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.36	<.001
Service			1.25	<.05
Missing			1.22	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			1.06	Ns
Missing			1.09	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Little or some Interest			0.81	<.05
Missing			0.89	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			0.81	Ns
Missing			1.10	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			0.75	<.05
Missing			0.76	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.28	<.01
High			1.34	<.001
Missing			1.27	Ns
N	5722			
Loglikelihood with constant only	7252 (df 5722)			
Loglikelihood with model fitted	7161 (df 5722)		7093 (df 5702)	

Table 3.3.2a: Men – Logistic regression equations for the likelihood of reporting excellent health – BCS70

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.56	<.001	0.37	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	1.07	Ns	1.01	Ns
Sub-degree	1.36	Ns	1.27	Ns
Degree & higher	1.56	<.001	1.35	<.01
Missing	0.78	Ns	0.81	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			0.89	Ns
Service			1.29	<.05
Missing			1.05	Ns
<i>Mother's education</i>				
By age 15			1	
Aged 16 plus			1.17	<.05
Missing			0.19	Ns
<i>Over-crowded at 10</i>				
Not over-crowded			1	
Over-crowded			1.08	Ns
Missing			0.98	Ns
<i>Free school meals at 10</i>				
No free school meals			1	
Free school meals			0.75	<.05
Missing			0.95	Ns
<i>Literacy & maths tests at 10</i>				
Low			1	
Middle			1.08	Ns
High			1.02	Ns
Missing			1.03	Ns
N	3890			
Loglikelihood with constant only	5188 (df 3899)			
Loglikelihood with model fitted	5150 (df 3895)		5128 (df 3883)	

Table 3.3.2b: Women – Logistic regression equations for the likelihood of reporting excellent health – BCS70

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.42	<.001	0.42	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	1.44	<.001	1.34	<.01
Sub-degree	1.47	<.01	1.38	<.05
Degree & higher	1.76	<.001	1.57	<.001
Missing	0.69	<.05	0.70	<.05
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.36	Ns
Service			1.25	Ns
Missing			1.22	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			0.99	Ns
Missing			1.04	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			1.25	Ns
Missing			0.78	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			1.06	Ns
Missing			1.27	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.11	Ns
High			1.18	ns
Missing			1.10	Ns
N	4689			
Loglikelihood with constant only	5944 (df 4688)			
Loglikelihood with model fitted	5874 (df 4684)		5853 (df 4672)	

Table 3.3.3a : Men - Logistic regression equations for the likelihood of reporting depression by qualifications and family characteristics

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.05	<.001	0.07	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	0.45	<.001	0.57	<.05
Non-completers	0.66	Ns	1.09	Ns
Sub-degree	0.47	<.01	0.62	Ns
Mature degree	0.24	Ns	0.38	Ns
Degree & higher	0.29	<.001	0.48	<.05
Missing	1.72	Ns	1.54	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			0.83	Ns
Service			0.81	Ns
Missing			0.78	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			0.78	Ns
Missing			1.26	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Little or some Interest			1.02	Ns
Missing			1.25	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			0.67	Ns
Missing			1.39	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			2.13	<.01
Missing			0.75	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			0.50	<.001
High			0.44	<.001
Missing			0.82	Ns
N	4712		4712	
Loglikelihood with Constant only	1515 (df 4711)			
Loglikelihood with model fitted	1479 (df 4705)		1439 (df 4691)	

Table 3. 3.3b: Women – Logistic regression equations for the likelihood of reporting depression by qualifications and family characteristics

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.45		0.32	
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	0.30	<.001	0.44	<.001
Non-completers	0.37	Ns	0.65	Ns
Sub-degree	0.43	<.001	0.59	<.01
Mature degree	0.13	<.05	0.18	Ns
Degree & higher	0.36	<.001	0.66	Ns
Missing	0.54	Ns	0.54	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			0.64	<.01
Service			0.64	<.05
Missing			0.74	Ns
<i>Mother's education</i>				
By age 15			1	
Aged over 16			0.81	Ns
Missing			1.19	Ns
<i>Mother's interest at 11</i>				
Very interested			1	
Little or some interest			0.86	Ns
Missing			0.89	Ns
<i>Over-crowded at 11</i>				
Not over-crowded			1	
Over-crowded			1.38	Ns
Missing			2.72	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			1.56	<.01
Missing			0.46	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			0.62	<.001
High			0.41	<.001
Missing			0.61	<.01
N	5018		5018	
Loglikelihood with Constant only	3346 (df 5017)			
Loglikelihood with model fitted	3255 (df 5011)		3152 (df 4997)	

Table 3.4.1: Likelihood of educational problems in respondents' children
(NCDS 1995 10% sample)

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	0.13	<.001	0.15	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	0.72	Ns	0.79	Ns
Sub-degree	0.74	Ns	0.75	Ns
Degree & higher	0.42	<.05	0.44	.10
Missing	0.31	Ns	0.42	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.44	Ns
Service			1.82	<.05
Missing			0.95	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			0.84	Ns
Missing			0.81	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			0.77	Ns
High			0.55	<.05
Missing			0.76	Ns
N	1256			
Loglikelihood with constant only	787 (df 1255)			
Loglikelihood with model fitted	776 (df 1251)		765 (df 1243)	

Table 3.4.2: Likelihood of owning more than 50 books of respondents' children (NCDS 1995 10% sample)

	Model 1		Model 2	
	Odds ratio	P	Odds ratio	P
Constant	2.39	<.001	1.92	<.001
<i>Education level</i>				
Below A-level	1		1	
A-level & equivalent	1.30	Ns	1.10	Ns
Sub-degree	1.95	<.001	1.51	<.05
Degree & higher	3.03	<.001	2.30	<.001
Missing	1.02	Ns	1.22	Ns
<i>Father's occupation at 16</i>				
Manual			1	
Intermediate			1.34	Ns
Service			1.03	Ns
Missing			1.07	Ns
<i>Free school meals at 11</i>				
No free school meals			1	
Free school meals			0.65	Ns
Missing			1.00	Ns
<i>Ability tests at 11</i>				
Low			1	
Middle			1.62	<.01
High			1.71	<.01
Missing			1.36	Ns
N	1263			
Loglikelihood with constant only	1368 (df 1262)			
Loglikelihood with model fitted	1363 (df 1259)		1330 (df 1250)	

Table 3.5.1a : Men – Logistic regression equations for the likelihood of voting

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	1.06	ns	1.11	ns	1.14	ns
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.40	<.001	1.37		1.36	<.001
Non-completers	1.24	Ns	1.17		1.13	Ns
Sub-degree	1.50	<.001	1.46		1.42	<.001
Mature degree	2.83	<.001	2.67		2.59	<.001
Degree & higher	1.79	<.001	1.71		1.65	<.001
Missing	0.73	Ns	0.74		0.73	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.07	Ns	1.10	Ns
Service			1.07	Ns	1.07	Ns
Missing			0.87	Ns	0.89	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.88	Ns	0.88	Ns
Missing			0.98	Ns	0.97	Ns
<i>Mother's interest at 11</i>						
Very interested			1	Ns	1	Ns
Not very interested			0.88	Ns	0.89	Ns
Missing			0.92		0.92	
<i>Overcrowding at 11</i>						
Not over-crowded			1		1	
Over-crowded			1.22	Ns	1.22	Ns
Missing			0.85	Ns	0.85	Ns
<i>Free school meals</i>						
No free school meals			1		1	
Free school meals			0.88	Ns	0.88	Ns
Missing			1.13	Ns	1.13	Ns
<i>Ability tests at 11</i>						
Low					1	
Middle			1	Ns	1.07	Ns
High			1.08	Ns	1.13	Ns
Missing			1.14	Ns	1.12	Ns
<i>Employment sector</i>						
Private					1	
Public/voluntary					1.14	Ns
Missing					0.77	Ns
N	5153					
Loglikelihood with constant fitted	7061 (df 5152)					
Loglikelihood with model fitted	6981 (df 5146)		6960 (df 5132)		6939 (df 5130)	

Table 3.5.1b : Women – Logistic regression equations for the likelihood of voting

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	1.02	ns	0.89	ns	0.85	ns
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.55	<.001	1.37	<.01	1.33	<.01
Non-completers	1.67	Ns	1.43	Ns	1.40	Ns
Sub-degree	1.28	<.01	1.16	<.01	1.07	Ns
Mature degree	2.93	<.01	2.56	<.01	2.31	<.01
Degree & higher	1.98	<.001	1.68	<.001	1.57	<.001
Missing	1.04	ns	1.05	Ns	1.03	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.04	Ns	1.05	Ns
Service			1.11	Ns	1.12	Ns
Missing			0.89	Ns	0.90	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			0.96	Ns	0.97	Ns
Missing			1.04	Ns	1.04	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.96	Ns	0.95	Ns
Missing			1.00	Ns	1.00	Ns
<i>Over-crowded at 11</i>						
Not over-crowded			1		1	
Over-crowded			1.03	Ns	0.66	Ns
Missing			0.64	Ns	0.94	Ns
<i>Free school meals at 11</i>						
No Free school meals			1			
Free school meals			0.95	Ns	1.29	Ns
Missing			1.32	Ns	1.24	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.25	<.01	1.23	<.01
High			1.47	<.001	1.46	<.001
Missing			1.23	Ns	1.22	Ns
<i>Employment</i>						
Private					1	
Public/Voluntary					1.24	<.001
Missing					0.97	Ns
N	5449					
Loglikelihood with constant fitted	7509 (df 5448)					
Loglikelihood with model fitted	7429 (df 5442)		7393 (df 5428)		7379 (df 5426)	

Table 3.5.2a : Men - Logistic regression equations for the likelihood of current membership of a voluntary organisation

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.09	<.001	0.06	<.001	0.05	<.001
Education level						
Below A-level	1		1		1	
A-level & equivalent	1.73	<.001	1.53	<.001	1.53	<.001
Non-completers	2.77	<.001	2.24	<.01	2.20	<.01
Sub-degree	2.24	<.001	1.93	<.001	1.90	<.001
Mature degree	3.97	<.001	3.18	<.001	2.96	<.001
Degree & higher	5.08	<.001	3.83	<.001	3.61	<.001
Missing	0.62	Ns	0.65	Ns	0.63	Ns
Father's occupation at 16						
Manual			1		1	
Intermediate			1.25	Ns	1.29	<.05
Service			1.43	<.01	1.47	<.01
Missing			1.14	Ns	1.18	Ns
Mother's education						
By age 15			1		1	
Aged over 16			1.23	<.05	1.23	<.05
Missing			1.12	Ns	1.10	Ns
Mother's interest at 11						
Very interested			1		1	
Not very interested			0.92	Ns	0.93	Ns
Missing			1.06	Ns	1.08	Ns
Over-crowded at 11						
Not over-crowded			1		1	
Over-crowded			1.12	Ns	1.12	Ns
Missing			0.65	Ns	0.64	Ns
Free school meals at 11						
No free school meals			1			
Free school meals			0.60	<.05	0.61	<.05
Missing			1.05	Ns	1.08	Ns
Ability tests at 11						
Low			1		1	
Middle			1.43	<.01	1.42	<.01
High			1.40	<.01	1.42	<.01
Missing			1.65	<.01	1.68	<.01
Employment						
Private					1	
Public/Voluntary					1.64	<.001
Missing					1.22	Ns
N	5550					
Loglikelihood with constant fitted	4466 (df 5549)					
Loglikelihood with model fitted	4211 (df 5543)		4163 (df 5529)		4136 (df 5527)	

Table 3.5.2a continued: Men – Logistic regression equations for the likelihood of current membership of a voluntary organisation

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.09	<.001	0.06	<.001	0.05	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.73	<.001	1.53	<.001	1.53	<.001
Non-completers	2.77	<.001	2.24	<.01	2.20	<.01
Sub-degree	2.24	<.001	1.93	<.001	1.90	<.001
Mature degree	3.97	<.001	3.18	<.001	2.96	<.001
Degree & higher	5.08	<.001	3.83	<.001	3.61	<.001
Missing	0.62	Ns	0.65	Ns	0.63	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.25	Ns	1.29	<.05
Service			1.43	<.01	1.47	<.01
Missing			1.14	Ns	1.18	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.23	<.05	1.23	<.05
Missing			1.12	Ns	1.10	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			0.92	Ns	0.93	Ns
Missing			1.06	Ns	1.08	Ns
<i>Over-crowded at 11</i>						
Not over-crowded			1		1	
Over-crowded			1.12	Ns	1.12	Ns
Missing			0.65	Ns	0.64	Ns
<i>Free school meals at 11</i>						
No free school meals			1			
Free school meals			0.60	<.05	0.61	<.05
Missing			1.05	Ns	1.08	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.43	<.01	1.42	<.01
High			1.40	<.01	1.42	<.01
Missing			1.65	<.01	1.68	<.01
<i>Employment</i>						
Private					1	
Public/Voluntary					1.64	<.001
Missing					1.22	Ns
N	5550					
Loglikelihood with constant fitted	4466 (df 5549)					
Loglikelihood with model fitted	4211 (df 5543)		4163 (df 5529)		4136 (df 5527)	

Table 3.5.2b: Women – Logistic regression equations for the likelihood of current membership in a voluntary organisation

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.21	<.001	0.13	<.001	0.11	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	2.29	<.001	1.75	<.001	1.70	<.001
Non-completers	3.86	<.001	2.77	<.001	2.68	<.001
Sub-degree	2.43	<.001	1.98	<.001	1.85	<.001
Mature degree	4.56	<.001	3.48	<.001	3.24	<.001
Degree & higher	4.27	<.001	2.92	<.001	2.74	<.001
Missing	0.85	ns	0.81	ns	0.77	ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.04	Ns	1.04	Ns
Service			1.33	<.01	1.34	<.01
Missing			0.83	Ns	0.82	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.15	Ns	1.16	Ns
Missing			1.16	Ns	1.17	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.15	Ns	1.15	Ns
Missing			0.90	Ns	0.90	Ns
<i>Over-crowded at 11</i>						
Not over-crowded			1		1	
Over-crowded			0.86	Ns	0.86	Ns
Missing			1.64	Ns	1.67	Ns
<i>Free school meals at 11</i>						
No free school meals			1		1	
Free school meals			0.98	Ns	0.96	Ns
Missing			0.66	Ns	0.64	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.64	<.001	1.65	<.001
High			2.19	<.001	2.20	<.001
Missing			1.77	<.001	1.77	<.001
<i>Employment</i>						
Private					1	
Public/Voluntary					1.26	<.01
Missing					1.32	<.01
N	5709					
Loglikelihood with constant fitted	6349 (df 5708)					
Loglikelihood with model fitted	6020 (df 5702)		5919 (df 5686)		5905 (df 5686)	

Table 3.5.2c: Men – Logistic regression equations for the likelihood of *active* current membership in a voluntary organisation

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.06	<.001	0.04	<.001	0.04	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.56	<.01	1.37	<.05	1.37	<.05
Non-completers	2.58	<.01	2.11	<.05	2.09	<.05
Sub-degree	2.13	<.001	1.85	<.001	1.83	<.001
Mature degree	4.10	<.001	3.37	<.001	3.17	<.001
Degree & higher	3.78	<.001	2.86	<.001	2.72	<.001
Missing	0.68	ns	0.70	Ns	0.68	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.13	Ns	1.16	Ns
Service			1.06	Ns	1.08	Ns
Missing			1.07	Ns	1.10	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.57	<.001	1.57	<.001
Missing			1.32	Ns	1.29	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.02	Ns	1.02	Ns
Missing			0.87	Ns	0.87	Ns
<i>Overcrowded at 11</i>						
Not over-crowded			1		1	
Over-crowded			1.06	Ns	1.06	Ns
Missing			0.43	<.05	0.42	<.05
<i>Free school meals at 11</i>						
No free school meals			1		1	
Free school meals			0.52	<.05	0.52	<.05
Missing			1.49	Ns	1.53	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.46	<.01	1.45	<.01
High			1.36	<.05	1.38	<.05
Missing			1.93	<.01	1.97	<.01
<i>Employment</i>						
Private					1	
Public/Voluntary					1.55	<.001
Missing					1.25	Ns
N	5575					
Loglikelihood with constant fitted	3411 (df 5574)					
Loglikelihood with model fitted	3281 (df 5568)		3236 (df 5554)		3221 (df 5552)	

Table 3.5.2c : Women – Logistic regression equations for the likelihood of current active membership in a voluntary organisation

	Model 1		Model 2		Model 3	
	Odds ratio	P	Odds ratio	P	Odds ratio	P
Constant	0.19	<.001	0.12	<.001	0.11	<.001
<i>Education level</i>						
Below A-level	1		1		1	
A-level & equivalent	1.83	<.001	1.43	<.01	1.40	<.01
Non-completers	3.43	<.001	2.53	<.001	2.46	<.001
Sub-degree	2.19	<.001	1.80	<.001	1.69	<.001
Mature degree	2.61	<.001	2.04	<.01	1.90	<.05
Degree & higher	3.18	<.001	2.25	<.001	2.12	<.001
Missing	0.93	Ns	0.89	Ns	0.87	Ns
<i>Father's occupation at 16</i>						
Manual			1		1	
Intermediate			1.09	Ns	1.10	Ns
Service			1.31	<.01	1.31	<.01
Missing			0.92	Ns	0.92	Ns
<i>Mother's education</i>						
By age 15			1		1	
Aged over 16			1.07	Ns	1.08	Ns
Missing			1.03	Ns	1.03	Ns
<i>Mother's interest at 11</i>						
Very interested			1		1	
Not very interested			1.03	Ns	1.03	Ns
Missing			0.94	Ns	0.94	Ns
<i>Over-crowded at 11</i>						
Not over-crowded			1		1	
Over-crowded			0.95	Ns	0.94	Ns
Missing			1.07	Ns	0.94	Ns
<i>Free school meals at 11</i>						
No free school meals			1			
Free school meals			0.86	Ns	0.85	Ns
Missing			1.02	Ns	0.10	Ns
<i>Ability tests at 11</i>						
Low			1		1	
Middle			1.62	<.001	1.62	<.001
High			2.08	<.001	2.09	<.001
Missing			1.60	<.01	1.59	<.01
<i>Employment</i>						
Private					1	
Public/Voluntary					1.23	<.01
					1.16	Ns
N	5748					
Loglikelihood with Constant fitted	5958 (df 5747)					
Loglikelihood with Model fitted	5760 (df 5741)		5684 (df 5727)		5677 (df 5725)	

Table 3.6.1a : Political cynicism by qualifications, controlling for childhood characteristics, ethnicity and public sector employment – Men

Variables	Unstandardised coefficients		t	Sig.	95% Confidence interval (CI) for B	
	B	Std. Error			Lower	Upper
Constant	3.016	.016	193.816	.000	2.985	3.046
A-level & equivalent	-.212	.031	-6.897	.000	-.273	-.152
Non-completion	-.416	.086	-4.859	.000	-.584	-.248
Sub-degree	-.364	.034	-10.817	.000	-.430	-.298
Mature degree	-.520	.092	-5.621	.000	-.701	-.339
Degree	-.487	.035	-14.073	.000	-.555	-.419
Missing	.125	.074	1.690	.091	-.020	.270
Adjusted RSq	.055					
(Constant)	3.104	.030	104.788	.000	3.046	3.162
A-level & equivalent	-.153	.031	-4.907	.000	-.215	-.092
Non-completion	-.295	.086	-3.420	.001	-.464	-.126
Sub-degree	-.285	.034	-8.292	.000	-.353	-.218
Mature degree	-.395	.093	-4.262	.000	-.577	-.213
Degree	-.348	.038	-9.109	.000	-.423	-.273
Missing	.106	.073	1.445	.148	-.038	.250
Intermediate class	-.9.806E-02	.033	-2.981	.003	-.163	-.034
Service class	-.165	.039	-4.233	.000	-.241	-.088
Missing	-.4.763E-02	.045	-1.050	.294	-.137	.041
Mother's education over 15	1.017E-02	.029	.353	.724	-.046	.067
Missing	-.3.399E-02	.046	-.736	.462	-.125	.057
Parents no interest	4.089E-02	.036	1.143	.253	-.029	.111
Missing	4.291E-02	.031	1.386	.166	-.018	.104
Free school meals	.101	.045	2.228	.026	.012	.190
Missing	.105	.089	1.188	.235	-.068	.279
Overcrowd at 11	9.093E-02	.041	2.203	.028	.010	.172
Missing	-.6.793E-02	.092	-.735	.462	-.249	.113
Midtest	-.134	.030	-4.467	.000	-.192	-.075
Hitest	-.193	.032	-5.978	.000	-.257	-.130
Missing	-.9.795E-02	.047	-2.096	.036	-.190	-.006
Adjusted RSq	.071					
(Constant)	3.108	.031	99.793	.000	3.047	3.169
A-level & equivalent	-.153	.031	-4.900	.000	-.214	-.092
Non-completion	-.303	.086	-3.510	.000	-.472	-.134
Sub-degree	-.288	.034	-8.355	.000	-.356	-.221
Mature degree	-.402	.093	-4.336	.000	-.584	-.220
Degree	-.351	.038	-9.142	.000	-.427	-.276
Missing	.108	.073	1.475	.140	-.036	.252
Intermediate class	-.9.404E-02	.033	-2.852	.004	-.159	-.029
Service class	-.161	.039	-4.123	.000	-.237	-.084
Missing	-.3.623E-02	.046	-.794	.427	-.126	.053
Mother's education over 15	8.467E-03	.029	.294	.769	-.048	.065
Missing	-.4.246E-02	.046	-.916	.360	-.133	.048
Parents no interest	4.258E-02	.036	1.190	.234	-.028	.113
Missing	4.250E-02	.031	1.373	.170	-.018	.103
Free school meals	.103	.045	2.260	.024	.014	.192
Missing	.104	.089	1.178	.239	-.069	.278
Overcrowd at 11	8.818E-02	.041	2.136	.033	.007	.169
Missing	-.7.328E-02	.092	-.793	.428	-.254	.108
Midtest	-.133	.030	-4.444	.000	-.192	-.074
Hitest	-.193	.032	-5.964	.000	-.256	-.130
Missing	-.105	.047	-2.251	.024	-.197	-.014

					97	
Asian	.275	.123	2.229	.026	.033	.517
Public sector	-1.278E-03	.028	-.046	.963	-.055	.053
Missing	-2.719E-02	.029	-.949	.342	-.083	.029
Adjusted RSq	.072					

Characteristics, ethnicity and public sector employment – women

Variable	Unstandardised coefficients	t	Sig.	95% CI for B	
	B	Std. Error		Lower	Upper
(Constant)	2.950	.012	242.909	.000	2.927 2.974
A-level & equivalent	-.375	.034	-11.082	.000	-.441 -.308
Non-completion	-.424	.095	-4.458	.000	-.611 -.238
Sub-degree	-.303	.029	-10.490	.000	-.360 -.246
Mature degree	-.502	.100	-5.041	.000	-.697 -.307
Degree	-.502	.032	-15.579	.000	-.565 -.439
Missing	5.712E-02	.076	.747	.455	-.093 .207
Adjusted RSq	.068				
(Constant)	3.135	.027	118.326	.000	3.083 3.187
A-level & equivalent	-.263	.034	-7.686	.000	-.331 -.196
Non-completion	-.267	.094	-2.835	.005	-.452 -.082
Sub-degree	-.206	.029	-7.066	.000	-.264 -.149
Mature degree	-.395	.098	-4.024	.000	-.588 -.203
Degree	-.332	.034	-9.632	.000	-.400 -.265
Missing	7.331E-02	.075	.976	.329	-.074 .221
Intermediate class	-.187	.028	-6.564	.000	-.243 -.131
Service class	-.177	.034	-5.263	.000	-.243 -.111
Missing	-8.509E-02	.039	-2.177	.030	-.162 -.008
Mother's education 15+	-6.644E-03	.024	-.273	.785	-.054 .041
Missing	5.346E-03	.040	.133	.894	-.073 .084
Parents no interest	-3.390E-02	.032	-1.076	.282	-.096 .028
Missing	2.950E-02	.025	1.184	.237	-.019 .078
Free school meals	.136	.037	3.644	.000	.063 .210
Missing	-6.266E-02	.088	-.711	.477	-.235 .110
Overcrowded	3.537E-02	.036	.995	.320	-.034 .105
Missing	6.473E-02	.092	.703	.482	-.116 .245
Midtest	-.164	.027	-6.050	.000	-.217 -.111
Hitest	-.284	.029	-9.975	.000	-.340 -.229
Missing	-.135	.041	-3.288	.001	-.216 -.055
Adjusted RSq	.102				
(Constant)	3.143	.028	113.146	.000	3.089 3.198
A-level & equivalent	-.259	.034	-7.536	.000	-.327 -.192
Non-completion	-.264	.094	-2.796	.005	-.449 -.079
Sub-degree	-.195	.030	-6.464	.000	-.254 -.136
Mature degree	-.382	.099	-3.870	.000	-.575 -.188
Degree	-.322	.035	-9.152	.000	-.391 -.253
Missing	7.592E-02	.075	1.010	.312	-.071 .223
Intermediate class	-.188	.028	-6.592	.000	-.243 -.132
Service class	-.178	.034	-5.282	.000	-.244 -.112
Missing	-8.556E-02	.039	-2.188	.029	-.162 -.009
Mother's education 15+	-7.719E-03	.024	-.317	.751	-.055 .040
Missing	5.251E-03	.040	.131	.896	-.073 .084
Parents no interest	-3.323E-02	.032	-1.055	.292	-.095 .029
Missing	2.930E-02	.025	1.176	.240	-.020 .078
Free school meals	.137	.037	3.667	.000	.064 .211
Missing	-5.889E-02	.088	-.668	.504	-.232 .114
Overcrowded	3.566E-02	.036	1.003	.316	-.034 .105
Missing	6.040E-02	.092	.656	.512	-.120 .241
Midtest	-.163	.027	-6.014	.000	-.217 -.110
Hitest	-.284	.029	-9.954	.000	-.340 -.228
Missing	-.134	.041	-3.269	.001	-.215 -.054
Public sector	-3.169E-02	.022	-1.440	.150	-.075 .011
Missing	-4.864E-03	.028	-.172	.864	-.060 .051
Adjusted RSq	.102				

Table 3.6.2a : Men – Attitudes to gender equality by qualifications, controlling for childhood characteristics, ethnicity and public sector employment

Variables	Unstandardised coefficients		t	Sig.	95% CI for B	
	B	Std. Error			Lower	Upper
(Constant)	3.657	.011	345.984	.000	3.636	3.677
A-level & equivalent	2.187E-02	.021	1.044	.296	-.019	.063
Non-completion	.211	.059	3.600	.000	.096	.326
Sub-degree	7.151E-02	.023	3.129	.002	.027	.116
Mature degree	.444	.063	7.082	.000	.321	.567
Degree	.314	.024	13.353	.000	.268	.360
Missing	.114	.050	2.279	.023	.016	.212
ARSq	.042					
(Constant)	3.621	.020	178.493	.000	3.581	3.660
A-level & equivalent	1.178E-02	.021	.550	.582	-.030	.054
Non-completion	.185	.059	3.110	.002	.068	.302
Sub-degree	5.454E-02	.024	2.315	.021	.008	.101
Mature degree	.416	.063	6.576	.000	.292	.540
Degree	.280	.026	10.725	.000	.229	.331
Missing	.114	.050	2.272	.023	.016	.212
Intermediate class	-3.650E-02	.023	-1.618	.106	-.081	.008
Service class	4.341E-02	.027	1.635	.102	-.009	.095
Missing	-3.702E-02	.031	-1.190	.234	-.098	.024
Mother's education over 15	-9.261E-03	.020	-.471	.638	-.048	.029
Missing	5.500E-02	.032	1.735	.083	-.007	.117
Parents no interest	-1.588E-02	.024	-.650	.516	-.064	.032
Missing	2.571E-02	.021	1.213	.225	-.016	.067
Free school meals	2.876E-02	.031	.929	.353	-.032	.089
Missing	3.138E-02	.061	.516	.606	-.088	.151
Overcrowd at 11	3.519E-02	.028	1.249	.212	-.020	.090
Missing	-3.684E-02	.063	-.581	.561	-.161	.087
Midtest	3.144E-02	.020	1.534	.125	-.009	.072
Hitest	7.723E-02	.022	3.492	.000	.034	.121
Missing	1.167E-02	.032	.365	.715	-.051	.074
ARSq	.044					
(Constant)	3.620	.021	171.556	.000	3.579	3.662
A level & equivalent	9.988E-03	.021	.472	.637	-.032	.052
Non-completion	.166	.059	2.822	.005	.051	.282
Sub-degree	3.979E-02	.023	1.703	.089	-.006	.086
Mature degree	.389	.063	6.206	.000	.266	.512
Degree	.260	.026	9.999	.000	.209	.311
Missing	.109	.050	2.206	.027	.012	.206
Intermediate class	-1.957E-02	.022	-.875	.382	-.063	.024
Service class	5.276E-02	.026	2.007	.045	.001	.104
Missing	-1.395E-02	.031	-.451	.652	-.075	.047
Mother's education over 15	-1.264E-02	.020	-.648	.517	-.051	.026
Missing	3.879E-02	.031	1.233	.217	-.023	.100
Parents no interest	-1.117E-02	.024	-.462	.644	-.059	.036
Missing	2.373E-02	.021	1.131	.258	-.017	.065
Free school meals	3.056E-02	.031	.998	.318	-.029	.091
Missing	3.150E-02	.060	.524	.600	-.086	.149
Overcrowd at 11	3.572E-02	.028	1.282	.200	-.019	.090
Missing	-3.774E-02	.063	-.602	.547	-.161	.085
Midtest	2.742E-02	.020	1.352	.176	-.012	.067
Hitest	7.341E-02	.022	3.350	.001	.030	.116
Misstest	1.392E-02	.032	.441	.660	-.048	.076
Afro-caribbean	.332	.082	4.045	.000	.171	.493
Public sector	.106	.019	5.665	.000	.069	.143
Missing	-.122	.019	-6.290	.000	-.160	-.084
Adjusted RSq	.065					

Table 3.6.2b : Women – Gender equality by qualifications

Variables	Unstandardised coefficients	Std. Error	T	Sig.	95% CI for B
	B				Lower Upper
(Constant)	3.875	.008	475.862	.000	3.859 3.891
A-level & equivalent	.114	.023	5.024	.000	.069 .158
Non-completion	.274	.063	4.344	.000	.150 .397
Sub-degree	.204	.019	10.584	.000	.166 .242
Mature degree	.401	.068	5.850	.000	.266 .535
Degree	.408	.022	18.910	.000	.366 .450
Missing	5.556E-03	.051	.109	.913	-.094 .105
Adjusted RSq	.076				
(Constant)	3.831	.018	211.393	.000	3.796 3.867
A-level & equivalent	.100	.023	4.293	.000	.055 .146
Non-completion	.259	.064	4.069	.000	.134 .383
Sub-degree	.191	.020	9.624	.000	.152 .230
Mature degree	.385	.069	5.609	.000	.251 .520
Degree	.392	.023	16.680	.000	.346 .438
Missing	6.431E-03	.051	.127	.899	-.093 .106
Intermediate class	2.079E-02	.019	1.071	.284	-.017 .059
Service class	-1.830E-02	.023	-.797	.426	-.063 .027
Missing	-1.578E-02	.026	-.596	.551	-.068 .036
Mother's education over 15	-2.451E-02	.017	-1.474	.140	-.057 .008
Missing	2.356E-03	.027	.087	.931	-.051 .056
Parents no interest	2.634E-02	.022	1.225	.221	-.016 .069
Missing	3.890E-02	.017	2.292	.022	.006 .072
Free school meals	3.089E-02	.026	1.209	.227	-.019 .081
Missing	5.550E-02	.061	.912	.362	-.064 .175
Overcrowd at 11	5.686E-03	.024	.236	.813	-.042 .053
Missing	-5.320E-02	.064	-.837	.402	-.178 .071
Midtest	3.456E-02	.019	1.866	.062	-.002 .071
Hitest	8.405E-02	.019	4.321	.000	.046 .122
Missing	5.272E-03	.028	.188	.851	-.050 .060
Adjusted RSq	.079				
(Constant)	3.828	.019	202.160	.000	3.791 3.865
A-level & equivalent	9.412E-02	.023	4.016	.000	.048 .140
Non-completion	.250	.063	3.938	.000	.125 .374
Sub-degree	.177	.020	8.638	.000	.137 .217
Mature degree	.357	.069	5.189	.000	.222 .492
Degree	.377	.024	15.767	.000	.330 .424
Missing	5.194E-03	.051	.103	.918	-.094 .104
Intermediate	2.480E-02	.019	1.280	.200	-.013 .063
Service class	-1.397E-02	.023	-.610	.542	-.059 .031
Missing	-1.328E-02	.026	-.502	.615	-.065 .039
Mother's education over 15	-2.837E-02	.017	-1.707	.088	-.061 .004
Missing	-1.717E-03	.027	-.063	.950	-.055 .052
Parents no interest	2.176E-02	.021	1.014	.311	-.020 .064
Missing	3.490E-02	.017	2.060	.039	.002 .068
Free school meals	3.284E-02	.025	1.288	.198	-.017 .083
Missing	5.523E-02	.061	.910	.363	-.064 .174
Overcrowded at 11	-2.841E-03	.024	-.118	.906	-.050 .044
Missing	-5.729E-02	.063	-.904	.366	-.182 .067
Midtest	3.555E-02	.019	1.920	.055	-.001 .072
Hitest	8.628E-02	.019	4.441	.000	.048 .124
Missing	9.358E-03	.028	.334	.738	-.046 .064
Afro-caribbean	.291	.071	4.119	.000	.153 .430
Other ethnic minority	.281	.109	2.565	.010	.066 .495
Public sector	3.461E-02	.015	2.312	.021	.005 .064
Missing	-4.080E-02	.019	-2.118	.034	-.079 .003
ARSq	.085				

Table 3.6.2c: Men – Anti-racism by qualifications, controlling for childhood characteristics, ethnicity and public sector employment

Variable	Unstandardised coefficients		t	Sig.	95% CI for B	
	B	Std. Error			Lower	Upper
(Constant)	3.624	.014	255.727	.000	3.596	3.652
A-level & equivalent	2.445E-02	.028	.870	.384	-.031	.080
Non-completion	.327	.078	4.194	.000	.174	.480
Sub-degree	7.809E-02	.031	2.545	.011	.018	.138
Mature degree	.531	.085	6.271	.000	.365	.697
Degree	.494	.031	15.712	.000	.433	.556
Missing	5.083E-02	.068	.747	.455	-.083	.184
Adjusted RSq	.054					
(Constant)	3.514	.027	129.619	.000	3.461	3.567
A-level & equivalent	-2.366E-03	.029	-.083	.934	-.059	.054
Non-completion	.260	.079	3.303	.001	.106	.414
Sub-degree	3.862E-02	.032	1.224	.221	-.023	.100
Mature degree	.474	.085	5.558	.000	.307	.641
Degree	.412	.035	11.810	.000	.344	.481
Missing	5.671E-02	.068	.836	.403	-.076	.190
Intermediate class	-3.892E-02	.030	-1.290	.197	-.098	.020
Service class	4.330E-02	.036	1.219	.223	-.026	.113
Missing	-3.335E-02	.042	-.801	.423	-.115	.048
Mother's education 15+	4.912E-02	.026	1.863	.062	-.003	.101
Missing	6.465E-02	.042	1.526	.127	-.018	.148
Parent's no interest	-1.340E-02	.033	-.410	.682	-.077	.051
Missing	4.088E-02	.028	1.442	.149	-.015	.096
Free school meals	9.087E-03	.041	.219	.826	-.072	.090
Missing	6.264E-02	.081	.770	.441	-.097	.222
Over-crowded	9.381E-02	.038	2.486	.013	.020	.168
Missing	-1.103E-02	.085	-.130	.897	-.178	.156
Midtest	9.554E-02	.027	3.485	.000	.042	.149
Hitest	.170	.030	5.750	.000	.112	.228
Missing	3.527E-02	.043	.825	.409	-.049	.119
Adjusted RSq	.053					
(Constant)	3.490	.028	123.516	.000	3.434	3.545
A-level & equivalent	-3.667E-03	.028	-.129	.897	-.059	.052
Non-completion	.241	.078	3.084	.002	.088	.394
Sub-degree	2.417E-02	.031	.772	.440	-.037	.086
Mature degree	.430	.085	5.093	.000	.265	.596
Degree	.388	.035	11.163	.000	.320	.457
Missing	5.343E-02	.067	.795	.427	-.078	.185
Intermediate class	-1.689E-02	.030	-.563	.573	-.076	.042
Service class	6.098E-02	.035	1.731	.084	-.008	.130
Missing	9.993E-03	.042	.241	.810	-.071	.091
Mother's education 15+	3.754E-02	.026	1.434	.152	-.014	.089
Missing	2.746E-02	.042	.651	.515	-.055	.110
Parent's no interest	-7.800E-03	.032	-.241	.810	-.071	.056
Missing	3.782E-02	.028	1.346	.178	-.017	.093
Free school meals	1.209E-02	.041	.295	.768	-.068	.093
Missing	6.405E-02	.081	.795	.427	-.094	.222
Over-crowded	9.256E-02	.037	2.476	.013	.019	.166
Missing	-2.565E-02	.084	-.305	.761	-.191	.139
Midtest	9.405E-02	.027	3.462	.001	.041	.147
Hitest	.174	.029	5.913	.000	.116	.231
Missing	3.271E-02	.042	.771	.441	-.050	.116
Afro	.660	.109	6.065	.000	.447	.873
Asian	.361	.112	3.235	.001	.142	.580
Pubemp	.151	.025	6.023	.000	.102	.200
Misspub	-7.924E-02	.026	-3.044	.002	-.130	-.028
Adjusted RSq	.078					

Table 3.6.2d: Women - Anti-racism by qualifications, controlling for childhood characteristics, ethnicity and public sector employment

Variables	Unstandardised coefficients	t	Sig.	95% CI for B	
	B	Std. Error		Lower	Upper
(Constant)	3.742	.010	358.811	.000	3.722 3.763
A-level & equivalent	.145	.029	5.000	.000	.088 .201
Non-completion	.290	.082	3.537	.000	.129 .450
Sub-degree	.221	.025	8.961	.000	.173 .269
Mature degree	.427	.085	5.023	.000	.260 .593
Degree	.471	.028	17.135	.000	.417 .525
Missing	3.719E-02	.066	.566	.571	-.092 .166
Adjusted RSq	.061				
(Constant)	3.697	.023	159.769	.000	3.652 3.743
A-level & equivalent	.127	.030	4.268	.000	.069 .186
Non-completion	.266	.082	3.225	.001	.104 .428
Sub-degree	.214	.025	8.442	.000	.164 .264
Mature degree	.394	.085	4.622	.000	.227 .561
Degree	.445	.030	14.889	.000	.387 .504
Missing	4.221E-02	.066	.644	.520	-.086 .171
Intermediate class	-3.525E-02	.025	-1.423	.155	-.084 .013
Service class	-2.103E-02	.029	-.717	.474	-.079 .037
Missing	-2.865E-02	.034	-.846	.398	-.095 .038
Mother's education 15+	1.003E-02	.021	.473	.637	-.032 .052
Missing	3.121E-02	.035	.897	.370	-.037 .099
Parents no interest	-3.130E-02	.027	-1.140	.254	-.085 .023
Missing	-2.328E-02	.022	-1.071	.284	-.066 .019
Free school meals	.118	.033	3.612	.000	.054 .183
Missing	2.895E-02	.078	.373	.709	-.123 .181
Over-crowded	9.667E-02	.031	3.122	.002	.036 .157
Missing	-3.384E-02	.081	-.417	.677	-.193 .125
Midtest	2.149E-02	.024	.907	.365	-.025 .068
Hitest	9.469E-02	.025	3.806	.000	.046 .143
Missing	8.854E-02	.036	2.462	.014	.018 .159
Adjusted RSq	.067				
(Constant)	3.668	.024	152.199	.000	3.620 3.715
A-level & equivalent	.110	.030	3.694	.000	.052 .168
Non-completion	.235	.082	2.867	.004	.074 .396
Sub-degree	.185	.026	7.116	.000	.134 .236
Mature degree	.344	.085	4.038	.000	.177 .510
Degree	.411	.030	13.538	.000	.351 .470
Missing	4.035E-02	.065	.619	.536	-.087 .168
Intermediate class	-2.894E-02	.025	-1.175	.240	-.077 .019
Service class	-1.176E-02	.029	-.403	.687	-.069 .045
Missing	-2.354E-02	.034	-.698	.485	-.090 .043
Mother's education 15+	2.219E-03	.021	.105	.916	-.039 .044
Missing	2.286E-02	.035	.660	.509	-.045 .091
Parents no interest	-3.884E-02	.027	-1.423	.155	-.092 .015
Missing	-2.663E-02	.022	-1.231	.218	-.069 .016
Free school meals	.116	.033	3.547	.000	.052 .180
Missing	2.526E-02	.077	.327	.743	-.126 .177
Over-crowded	8.109E-02	.031	2.627	.009	.021 .142
Missing	-3.931E-02	.081	-.487	.626	-.198 .119
Midtest	2.737E-02	.024	1.159	.247	-.019 .074
Hitest	.103	.025	4.140	.000	.054 .151
Missing	9.040E-02	.036	2.525	.012	.020 .161
Afro-caribbean	.463	.091	5.083	.000	.284 .641
Other ethnicity	.568	.139	4.082	.000	.295 .841
Asian	.257	.110	2.346	.019	.042 .472

Public sector	8.456E-02	.019	4.444	.000 .047	.122
Missing	3.111E-02	.025	1.266	.205 -.017	.079
Adjusted RSq	.078				